

Official SAT[®] Practice Test 2006-07

Taking the Practice Test

The practice test will help you most if you take it under conditions as close as possible to those of the actual test.

- **Set aside 3 hours and 20 minutes of uninterrupted time**
That way you can complete the entire test in one sitting. *Note:* The total testing time is 3 hours and 45 minutes, but you save 25 minutes because the unscored section* from this practice test was omitted.
- **Sit at a desk or table cleared of any other papers or books**
You won't be able to take a dictionary, books, notes, or scratch paper into the test room.
- **Allow yourself the specified amount of time for each section**
Pace yourself by using a watch (without an audible alarm), which is what you are allowed to use on test day.
- **Have a calculator at hand when you take the math sections**
This will help you determine how much to use a calculator the day of the test. Use a calculator with which you are familiar—preferably the same calculator you will use on test day.
- **Read the test instructions carefully**
They are reprinted from the back cover of the test book. On test day, you will be asked to read them before you begin answering questions.
- **Make sure you use a No. 2 pencil**
It is very important that you fill in the entire circle on the answer sheet darkly and completely. If you change your response, erase it as completely as possible. It is very important that you follow these instructions when filling out your answer sheet.
- **Record your answers on paper, then score your test**
Use the answer sheet when completing a practice test on paper to simulate the real testing environment. After completing the practice test, you can score the test yourself with "Scoring Your Test," or you can return to collegeboard.com to enter your answers online and receive a score report and answer explanations.

*Section 4 is an unscored section and has been omitted on this test because it contains questions that may be used in future editions of the SAT[®].

Start with number 1 for each new section. If a section has fewer questions than answer spaces, leave the extra answer spaces blank. Be sure to erase any errors or stray marks completely.

**SECTION
2**

- | | | | | | | | |
|----|-----------------|----|-----------------|----|-----------------|----|-----------------|
| 1 | (A)(B)(C)(D)(E) | 11 | (A)(B)(C)(D)(E) | 21 | (A)(B)(C)(D)(E) | 31 | (A)(B)(C)(D)(E) |
| 2 | (A)(B)(C)(D)(E) | 12 | (A)(B)(C)(D)(E) | 22 | (A)(B)(C)(D)(E) | 32 | (A)(B)(C)(D)(E) |
| 3 | (A)(B)(C)(D)(E) | 13 | (A)(B)(C)(D)(E) | 23 | (A)(B)(C)(D)(E) | 33 | (A)(B)(C)(D)(E) |
| 4 | (A)(B)(C)(D)(E) | 14 | (A)(B)(C)(D)(E) | 24 | (A)(B)(C)(D)(E) | 34 | (A)(B)(C)(D)(E) |
| 5 | (A)(B)(C)(D)(E) | 15 | (A)(B)(C)(D)(E) | 25 | (A)(B)(C)(D)(E) | 35 | (A)(B)(C)(D)(E) |
| 6 | (A)(B)(C)(D)(E) | 16 | (A)(B)(C)(D)(E) | 26 | (A)(B)(C)(D)(E) | 36 | (A)(B)(C)(D)(E) |
| 7 | (A)(B)(C)(D)(E) | 17 | (A)(B)(C)(D)(E) | 27 | (A)(B)(C)(D)(E) | 37 | (A)(B)(C)(D)(E) |
| 8 | (A)(B)(C)(D)(E) | 18 | (A)(B)(C)(D)(E) | 28 | (A)(B)(C)(D)(E) | 38 | (A)(B)(C)(D)(E) |
| 9 | (A)(B)(C)(D)(E) | 19 | (A)(B)(C)(D)(E) | 29 | (A)(B)(C)(D)(E) | 39 | (A)(B)(C)(D)(E) |
| 10 | (A)(B)(C)(D)(E) | 20 | (A)(B)(C)(D)(E) | 30 | (A)(B)(C)(D)(E) | 40 | (A)(B)(C)(D)(E) |

**SECTION
3**

- | | | | | | | | |
|----|-----------------|----|-----------------|----|-----------------|----|-----------------|
| 1 | (A)(B)(C)(D)(E) | 11 | (A)(B)(C)(D)(E) | 21 | (A)(B)(C)(D)(E) | 31 | (A)(B)(C)(D)(E) |
| 2 | (A)(B)(C)(D)(E) | 12 | (A)(B)(C)(D)(E) | 22 | (A)(B)(C)(D)(E) | 32 | (A)(B)(C)(D)(E) |
| 3 | (A)(B)(C)(D)(E) | 13 | (A)(B)(C)(D)(E) | 23 | (A)(B)(C)(D)(E) | 33 | (A)(B)(C)(D)(E) |
| 4 | (A)(B)(C)(D)(E) | 14 | (A)(B)(C)(D)(E) | 24 | (A)(B)(C)(D)(E) | 34 | (A)(B)(C)(D)(E) |
| 5 | (A)(B)(C)(D)(E) | 15 | (A)(B)(C)(D)(E) | 25 | (A)(B)(C)(D)(E) | 35 | (A)(B)(C)(D)(E) |
| 6 | (A)(B)(C)(D)(E) | 16 | (A)(B)(C)(D)(E) | 26 | (A)(B)(C)(D)(E) | 36 | (A)(B)(C)(D)(E) |
| 7 | (A)(B)(C)(D)(E) | 17 | (A)(B)(C)(D)(E) | 27 | (A)(B)(C)(D)(E) | 37 | (A)(B)(C)(D)(E) |
| 8 | (A)(B)(C)(D)(E) | 18 | (A)(B)(C)(D)(E) | 28 | (A)(B)(C)(D)(E) | 38 | (A)(B)(C)(D)(E) |
| 9 | (A)(B)(C)(D)(E) | 19 | (A)(B)(C)(D)(E) | 29 | (A)(B)(C)(D)(E) | 39 | (A)(B)(C)(D)(E) |
| 10 | (A)(B)(C)(D)(E) | 20 | (A)(B)(C)(D)(E) | 30 | (A)(B)(C)(D)(E) | 40 | (A)(B)(C)(D)(E) |

CAUTION

Use the answer spaces in the grids below for Section 2 or Section 3 only if you are told to do so in your test book.

Student-Produced Responses

ONLY ANSWERS ENTERED IN THE CIRCLES IN EACH GRID WILL BE SCORED. YOU WILL NOT RECEIVE CREDIT FOR ANYTHING WRITTEN IN THE BOXES ABOVE THE CIRCLES.

<p>9</p>	<p>10</p>	<p>11</p>	<p>12</p>	<p>13</p>
<p>14</p>	<p>15</p>	<p>16</p>	<p>17</p>	<p>18</p>

Start with number 1 for each new section. If a section has fewer questions than answer spaces, leave the extra answer spaces blank. Be sure to erase any errors or stray marks completely.

**SECTION
4**

- 1 (A) (B) (C) (D) (E)
- 2 (A) (B) (C) (D) (E)
- 3 (A) (B) (C) (D) (E)
- 4 (A) (B) (C) (D) (E)
- 5 (A) (B) (C) (D) (E)
- 6 (A) (B) (C) (D) (E)
- 7 (A) (B) (C) (D) (E)
- 8 (A) (B) (C) (D) (E)
- 9 (A) (B) (C) (D) (E)
- 10 (A) (B) (C) (D) (E)

- 11 (A) (B) (C) (D) (E)
- 12 (A) (B) (C) (D) (E)
- 13 (A) (B) (C) (D) (E)
- 14 (A) (B) (C) (D) (E)
- 15 (A) (B) (C) (D) (E)
- 16 (A) (B) (C) (D) (E)
- 17 (A) (B) (C) (D) (E)
- 18 (A) (B) (C) (D) (E)
- 19 (A) (B) (C) (D) (E)
- 20 (A) (B) (C) (D) (E)

- 21 (A) (B) (C) (D) (E)
- 22 (A) (B) (C) (D) (E)
- 23 (A) (B) (C) (D) (E)
- 24 (A) (B) (C) (D) (E)
- 25 (A) (B) (C) (D) (E)
- 26 (A) (B) (C) (D) (E)
- 27 (A) (B) (C) (D) (E)
- 28 (A) (B) (C) (D) (E)
- 29 (A) (B) (C) (D) (E)
- 30 (A) (B) (C) (D) (E)

- 31 (A) (B) (C) (D) (E)
- 32 (A) (B) (C) (D) (E)
- 33 (A) (B) (C) (D) (E)
- 34 (A) (B) (C) (D) (E)
- 35 (A) (B) (C) (D) (E)
- 36 (A) (B) (C) (D) (E)
- 37 (A) (B) (C) (D) (E)
- 38 (A) (B) (C) (D) (E)
- 39 (A) (B) (C) (D) (E)
- 40 (A) (B) (C) (D) (E)

Section 4, the equating section of this practice

**SECTION
5**

- 1 (A) (B) (C) (D) (E)
- 2 (A) (B) (C) (D) (E)
- 3 (A) (B) (C) (D) (E)
- 4 (A) (B) (C) (D) (E)
- 5 (A) (B) (C) (D) (E)
- 6 (A) (B) (C) (D) (E)
- 7 (A) (B) (C) (D) (E)
- 8 (A) (B) (C) (D) (E)
- 9 (A) (B) (C) (D) (E)
- 10 (A) (B) (C) (D) (E)

- 11 (A) (B) (C) (D) (E)
- 12 (A) (B) (C) (D) (E)
- 13 (A) (B) (C) (D) (E)
- 14 (A) (B) (C) (D) (E)
- 15 (A) (B) (C) (D) (E)
- 16 (A) (B) (C) (D) (E)
- 17 (A) (B) (C) (D) (E)
- 18 (A) (B) (C) (D) (E)
- 19 (A) (B) (C) (D) (E)
- 20 (A) (B) (C) (D) (E)

- 21 (A) (B) (C) (D) (E)
- 22 (A) (B) (C) (D) (E)
- 23 (A) (B) (C) (D) (E)
- 24 (A) (B) (C) (D) (E)
- 25 (A) (B) (C) (D) (E)
- 26 (A) (B) (C) (D) (E)
- 27 (A) (B) (C) (D) (E)
- 28 (A) (B) (C) (D) (E)
- 29 (A) (B) (C) (D) (E)
- 30 (A) (B) (C) (D) (E)

- 31 (A) (B) (C) (D) (E)
- 32 (A) (B) (C) (D) (E)
- 33 (A) (B) (C) (D) (E)
- 34 (A) (B) (C) (D) (E)
- 35 (A) (B) (C) (D) (E)
- 36 (A) (B) (C) (D) (E)
- 37 (A) (B) (C) (D) (E)
- 38 (A) (B) (C) (D) (E)
- 39 (A) (B) (C) (D) (E)
- 40 (A) (B) (C) (D) (E)

CAUTION

Use the answer spaces in the grids below for Section 4 or Section 5 only if you are told to do so in your test book.

Student-Produced Responses

ONLY ANSWERS ENTERED IN THE CIRCLES IN EACH GRID WILL BE SCORED. YOU WILL NOT RECEIVE CREDIT FOR ANYTHING WRITTEN IN THE BOXES ABOVE THE CIRCLES.

9

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

10

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

11

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

12

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

13

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

14

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

15

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

16

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

17

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

18

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Start with number 1 for each new section. If a section has fewer questions than answer spaces, leave the extra answer spaces blank. Be sure to erase any errors or stray marks completely.

SECTION 8	1	A	B	C	D	E
	2	A	B	C	D	E
	3	A	B	C	D	E
	4	A	B	C	D	E
	5	A	B	C	D	E
	6	A	B	C	D	E
	7	A	B	C	D	E
	8	A	B	C	D	E
	9	A	B	C	D	E
	10	A	B	C	D	E
	11	A	B	C	D	E
	12	A	B	C	D	E
	13	A	B	C	D	E
	14	A	B	C	D	E
	15	A	B	C	D	E
	16	A	B	C	D	E
	17	A	B	C	D	E
	18	A	B	C	D	E
	19	A	B	C	D	E
	20	A	B	C	D	E
	21	A	B	C	D	E
	22	A	B	C	D	E
	23	A	B	C	D	E
	24	A	B	C	D	E
	25	A	B	C	D	E
	26	A	B	C	D	E
	27	A	B	C	D	E
	28	A	B	C	D	E
	29	A	B	C	D	E
	30	A	B	C	D	E
	31	A	B	C	D	E
	32	A	B	C	D	E
	33	A	B	C	D	E
	34	A	B	C	D	E
	35	A	B	C	D	E
	36	A	B	C	D	E
	37	A	B	C	D	E
	38	A	B	C	D	E
	39	A	B	C	D	E
	40	A	B	C	D	E

SECTION 9	1	A	B	C	D	E
	2	A	B	C	D	E
	3	A	B	C	D	E
	4	A	B	C	D	E
	5	A	B	C	D	E
	6	A	B	C	D	E
	7	A	B	C	D	E
	8	A	B	C	D	E
	9	A	B	C	D	E
	10	A	B	C	D	E
	11	A	B	C	D	E
	12	A	B	C	D	E
	13	A	B	C	D	E
	14	A	B	C	D	E
	15	A	B	C	D	E
	16	A	B	C	D	E
	17	A	B	C	D	E
	18	A	B	C	D	E
	19	A	B	C	D	E
	20	A	B	C	D	E
	21	A	B	C	D	E
	22	A	B	C	D	E
	23	A	B	C	D	E
	24	A	B	C	D	E
	25	A	B	C	D	E
	26	A	B	C	D	E
	27	A	B	C	D	E
	28	A	B	C	D	E
	29	A	B	C	D	E
	30	A	B	C	D	E
	31	A	B	C	D	E
	32	A	B	C	D	E
	33	A	B	C	D	E
	34	A	B	C	D	E
	35	A	B	C	D	E
	36	A	B	C	D	E
	37	A	B	C	D	E
	38	A	B	C	D	E
	39	A	B	C	D	E
	40	A	B	C	D	E

SECTION 10	1	A	B	C	D	E
	2	A	B	C	D	E
	3	A	B	C	D	E
	4	A	B	C	D	E
	5	A	B	C	D	E
	6	A	B	C	D	E
	7	A	B	C	D	E
	8	A	B	C	D	E
	9	A	B	C	D	E
	10	A	B	C	D	E
	11	A	B	C	D	E
	12	A	B	C	D	E
	13	A	B	C	D	E
	14	A	B	C	D	E
	15	A	B	C	D	E
	16	A	B	C	D	E
	17	A	B	C	D	E
	18	A	B	C	D	E
	19	A	B	C	D	E
	20	A	B	C	D	E
	21	A	B	C	D	E
	22	A	B	C	D	E
	23	A	B	C	D	E
	24	A	B	C	D	E
	25	A	B	C	D	E
	26	A	B	C	D	E
	27	A	B	C	D	E
	28	A	B	C	D	E
	29	A	B	C	D	E
	30	A	B	C	D	E
	31	A	B	C	D	E
	32	A	B	C	D	E
	33	A	B	C	D	E
	34	A	B	C	D	E
	35	A	B	C	D	E
	36	A	B	C	D	E
	37	A	B	C	D	E
	38	A	B	C	D	E
	39	A	B	C	D	E
	40	A	B	C	D	E

YOUR NAME (PRINT) _____ LAST FIRST MI

TEST CENTER _____ NUMBER NAME OF TEST CENTER ROOM NUMBER

SAT Reasoning Test — General Directions

Timing

- You will have 3 hours and 45 minutes to work on this test.
- There are ten separately timed sections:
 - One 25-minute essay
 - Six other 25-minute sections
 - Two 20-minute sections
 - One 10-minute section
- You may work on only one section at a time.
- The supervisor will tell you when to begin and end each section.
- If you finish a section before time is called, check your work on that section. You may NOT turn to any other section.
- Work as rapidly as you can without losing accuracy. Don't waste time on questions that seem too difficult for you.

Marking Answers

- Be sure to mark your answer sheet properly.



- You must use a No. 2 pencil.
- Carefully mark only one answer for each question.
- Make sure you fill the entire circle darkly and completely.
- Do not make any stray marks on your answer sheet.
- If you erase, do so completely. Incomplete erasures may be scored as intended answers.
- Use only the answer spaces that correspond to the question numbers.

Using Your Test Book

- You may use the test book for scratchwork, but you will not receive credit for anything written there.
- After time has been called, you may not transfer answers to your answer sheet or fill in circles.
- You may not fold or remove pages or portions of a page from this book, or take the book or answer sheet from the testing room.

Scoring

- For each correct answer, you receive one point.
- For questions you omit, you receive no points.
- For a wrong answer to a multiple-choice question, you lose one-fourth of a point.
 - If you can eliminate one or more of the answer choices as wrong, you increase your chances of choosing the correct answer and earning one point.
 - If you can't eliminate any choice, move on. You can return to the question later if there is time.
- For a wrong answer to a student-produced response ("grid-in") math question, you don't lose any points.
- Multiple-choice and student-produced response questions are machine scored.
- The essay is scored on a 1 to 6 scale by two different readers. The total essay score is the sum of the two readers' scores.
- Off-topic essays, blank essays, and essays written in ink will receive a score of zero.

IMPORTANT: The codes below are unique to your test book. Copy them on your answer sheet in boxes 8 and 9 and fill in the corresponding circles exactly as shown.

9	TEST FORM					
	(Copy from back of test book.)					

8	FORM CODE					
	(Copy and grid as on back of test book.)					
A	A	A	A	0	0	0
B	B	B	B	1	1	1
C	C	C	C	2	2	2
D	D	D	D	3	3	3
E	E	E	E	4	4	4
F	F	F	F	5	5	5
G	G	G	G	6	6	6
H	H	H	H	7	7	7
I	I	I	I	8	8	8
J	J	J	J	9	9	9
K	K	K	K			
L	L	L	L			
M	M	M	M			
N	N	N	N			
O	O	O	O			
P	P	P	P			
Q	Q	Q	Q			
R	R	R	R			
S	S	S	S			
T	T	T	T			
U	U	U	U			
V	V	V	V			
W	W	W	W			
X	X	X	X			
Y	Y	Y	Y			
Z	Z	Z	Z			

The passages for this test have been adapted from published material.
The ideas contained in them do not necessarily represent the opinions of the College Board.

DO NOT OPEN THIS BOOK UNTIL THE SUPERVISOR TELLS YOU TO DO SO.



ESSAY

Time — 25 minutes

Turn to page 2 of your answer sheet to write your ESSAY.

The essay gives you an opportunity to show how effectively you can develop and express ideas. You should, therefore, take care to develop your point of view, present your ideas logically and clearly, and use language precisely.

Your essay must be written on the lines provided on your answer sheet—you will receive no other paper on which to write. You will have enough space if you write on every line, avoid wide margins, and keep your handwriting to a reasonable size. Remember that people who are not familiar with your handwriting will read what you write. Try to write or print so that what you are writing is legible to those readers.

Important Reminders:

- **A pencil is required for the essay.** An essay written in ink will receive a score of zero.
- **Do not write your essay in your test book.** You will receive credit only for what you write on your answer sheet.
- **An off-topic essay will receive a score of zero.**

You have twenty-five minutes to write an essay on the topic assigned below.

Think carefully about the issue presented in the following excerpt and the assignment below.

Nowadays nothing is private: our culture has become too confessional and self-expressive. People think that to hide one's thoughts or feelings is to pretend not to have those thoughts or feelings. They assume that honesty requires one to express every inclination and impulse.

Adapted from J. David Velleman, "The Genesis of Shame"

Assignment: Should people make more of an effort to keep some things private? Plan and write an essay in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.

BEGIN WRITING YOUR ESSAY ON PAGE 2 OF THE ANSWER SHEET.

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.**



SECTION 2

Time — 25 minutes

20 Questions

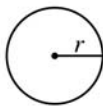
Turn to Section 2 (page 4) of your answer sheet to answer the questions in this section.

Directions: For this section, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratchwork.

Notes

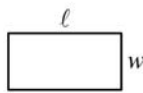
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function f is assumed to be the set of all real numbers x for which $f(x)$ is a real number.

Reference Information

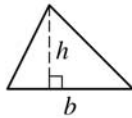


$$A = \pi r^2$$

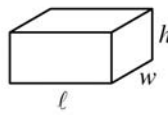
$$C = 2\pi r$$



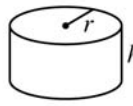
$$A = \ell w$$



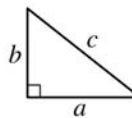
$$A = \frac{1}{2}bh$$



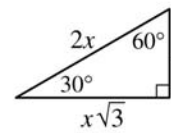
$$V = \ell wh$$



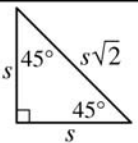
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

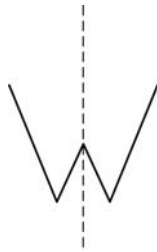
1. If $10 + x$ is 5 more than 10, what is the value of $2x$?

- (A) -5
 (B) 5
 (C) 10
 (D) 25
 (E) 50






2. The result when a number is divided by 2 is equal to the result when that same number is divided by 4. What is that number?

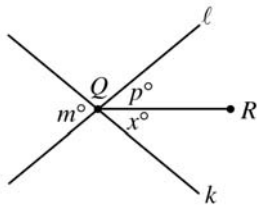
- (A) -4
 (B) -2
 (C) 0
 (D) 2
 (E) 4

GO ON TO THE NEXT PAGE



3. If this page was folded along the dotted line in the figure above, the left half of the letter W would exactly coincide with the right half of W. Which of the following letters, as shown, CANNOT be folded along a vertical line so that its left half would coincide with its right half?

- (A) 
- (B) 
- (C) 
- (D) 
- (E) 



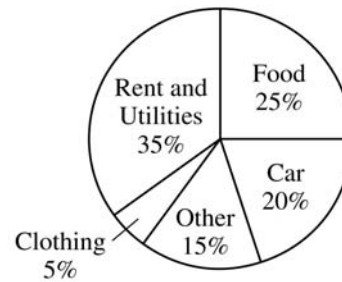
Note: Figure not drawn to scale.

4. In the figure above, lines l and k intersect at point Q . If $m = 40$ and $p = 25$, what is the value of x ?
- (A) 15
(B) 20
(C) 25
(D) 40
(E) 65

x	y
-2	-3
0	3
1	6
2	9
4	15

5. Which of the following equations is satisfied by the five pairs of numbers listed in the table above?
- (A) $y = x^3 + 3$
(B) $y = 3x + 3$
(C) $y = -3x + 6$
(D) $y = x^2 + 6$
(E) $y = x^2 - 7$

DAVID'S MONTHLY EXPENSES



6. The circle graph above shows how David's monthly expenses are divided. If David spends \$450 per month for food, how much does he spend per month on his car?
- (A) \$200
(B) \$320
(C) \$360
(D) \$400
(E) \$450

GO ON TO THE NEXT PAGE 



7. If n and k are positive integers and $8^n = 2^k$, what is the value of $\frac{n}{k}$?

- (A) $\frac{1}{4}$
 (B) $\frac{1}{3}$
 (C) $\frac{1}{2}$
 (D) 3
 (E) 4

8. In a certain store, the regular price of a refrigerator is \$600. How much money is saved by buying this refrigerator at 20 percent off the regular price rather than buying it on sale at 10 percent off the regular price with an additional discount of 10 percent off the sale price?

- (A) \$6
 (B) \$12
 (C) \$24
 (D) \$54
 (E) \$60

9. If the function f is defined by $f(x) = 3x + 4$, then $2f(x) + 4 =$

- (A) $5x + 4$
 (B) $5x + 8$
 (C) $6x + 4$
 (D) $6x + 8$
 (E) $6x + 12$

10. What is the greatest possible area of a triangle with one side of length 7 and another side of length 10?

- (A) 17
 (B) 34
 (C) 35
 (D) 70
 (E) 140

11. A total of 120,000 votes were cast for 2 opposing candidates, Garcia and Pérez. If Garcia won by a ratio of 5 to 3, what was the number of votes cast for Pérez?

- (A) 15,000
 (B) 30,000
 (C) 45,000
 (D) 75,000
 (E) 80,000

12. If a positive integer n is picked at random from the positive integers less than or equal to 10, what is the probability that $5n + 3 \leq 14$?

- (A) 0
 (B) $\frac{1}{10}$
 (C) $\frac{1}{5}$
 (D) $\frac{3}{10}$
 (E) $\frac{2}{5}$

13. If t is a number greater than 1, then t^2 is how much greater than t ?

- (A) 1
 (B) 2
 (C) t
 (D) $t(t - 1)$
 (E) $(t - 1)(t + 1)$

14. The height of a right circular cylinder is 5 and the diameter of its base is 4. What is the distance from the center of one base to a point on the circumference of the other base?

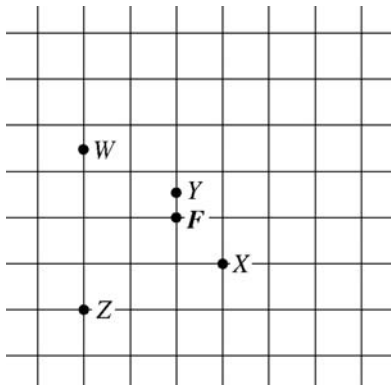
- (A) 3
 (B) 5
 (C) $\sqrt{29}$ (approximately 5.39)
 (D) $\sqrt{33}$ (approximately 5.74)
 (E) $\sqrt{41}$ (approximately 6.40)

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15. If p and n are integers such that $p > n > 0$ and $p^2 - n^2 = 12$, which of the following can be the value of $p - n$?
- I. 1
II. 2
III. 4
- (A) I only
(B) II only
(C) I and II only
(D) II and III only
(E) I, II, and III

Questions 16-18 refer to the following figure and information.



The grid above represents equally spaced streets in a town that has no one-way streets. F marks the corner where a firehouse is located. Points W , X , Y , and Z represent the locations of some other buildings. The fire company defines a building's m -distance as the minimum number of blocks that a fire truck must travel from the firehouse to reach the building. For example, the building at X is an m -distance of 2, and the building at Y is an m -distance of $\frac{1}{2}$ from the firehouse.

16. What is the m -distance of the building at W from the firehouse?
- (A) 2
(B) $2\frac{1}{2}$
(C) 3
(D) $3\frac{1}{2}$
(E) $4\frac{1}{2}$
- _____
17. What is the total number of different routes that a fire truck can travel the m -distance from F to Z ?
- (A) Six
(B) Five
(C) Four
(D) Three
(E) Two
- _____
18. All of the buildings in the town that are an m -distance of 3 from the firehouse must lie on a
- (A) circle
(B) square
(C) right isosceles triangle
(D) pair of intersecting lines
(E) line



19. If x and y are positive integers, which of the following is equivalent to $(2x)^{3y} - (2x)^y$?

- (A) $(2x)^{2y}$
- (B) $2^y(x^3 - x^y)$
- (C) $(2x)^y[(2x)^{2y} - 1]$
- (D) $(2x)^y(4x^y - 1)$
- (E) $(2x)^y[(2x)^3 - 1]$

20. If j , k , and n are consecutive integers such that $0 < j < k < n$ and the units (ones) digit of the product jn is 9, what is the units digit of k ?

- (A) 0
- (B) 1
- (C) 2
- (D) 3
- (E) 4

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

**SECTION 3**

Time — 25 minutes

24 Questions

Turn to Section 3 (page 4) of your answer sheet to answer the questions in this section.**Directions:** For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . useful
 (B) end . . divisive
 (C) overcome . . unattractive
 (D) extend . . satisfactory
 (E) resolve . . acceptable

(A) (B) (C) (D) ●

- Many private universities depend heavily on -----, the wealthy individuals who support them with gifts and bequests.

(A) instructors (B) administrators
 (C) monitors (D) accountants
 (E) benefactors
- One of the characters in Milton Murayama's novel is considered ----- because he deliberately defies an oppressive hierarchical society.

(A) rebellious (B) impulsive (C) artistic
 (D) industrious (E) tyrannical
- Nightjars possess a camouflage perhaps unparalleled in the bird world: by day they roost hidden in shady woods, so ----- with their surroundings that they are nearly impossible to ----- .

(A) vexed . . dislodge
 (B) blended . . discern
 (C) harmonized . . interrupt
 (D) impatient . . distinguish
 (E) integrated . . classify
- Many economists believe that since resources are scarce and since human desires cannot all be -----, a method of ----- is needed.

(A) indulged . . apportionment
 (B) verified . . distribution
 (C) usurped . . expropriation
 (D) expressed . . reparation
 (E) anticipated . . advertising
- The range of colors that homeowners could use on the exterior of their houses was ----- by the community's stringent rules regarding upkeep of property.

(A) circumscribed (B) bolstered
 (C) embellished (D) insinuated
 (E) cultivated

GO ON TO THE NEXT PAGE



The passages below are followed by questions based on their content; questions following a pair of related passages may also be based on the relationship between the paired passages. Answer the questions on the basis of what is stated or implied in the passages and in any introductory material that may be provided.

Questions 6-9 are based on the following passages.

Passage 1

I know what your e-mail in-box looks like, and it isn't pretty: a babble of come-ons and lies from hucksters and con artists. To find your real e-mail, you must wade through the torrent of fraud and obscenity known politely as "unsolicited bulk e-mail" and colloquially as "spam." In a perverse tribute to the power of the online revolution, we are all suddenly getting the same mail: easy weight loss, get-rich-quick schemes, etc. The crush of these messages is now numbered in billions per day. "It's becoming a major systems and engineering and network problem," says one e-mail expert. "Spammers are gaining control of the Internet."

Passage 2

Many people who hate spam assume that it is protected as free speech. Not necessarily so. The United States Supreme Court has previously ruled that individuals may preserve a threshold of privacy. "Nothing in the Constitution compels us to listen to or view any unwanted communication, whatever its merit," wrote Chief Justice Warren Burger in a 1970 decision. "We therefore categorically reject the argument that a vendor has a right to send unwanted material into the home of another." With regard to a seemingly similar problem, the Telephone Consumer Protection Act of 1991 made it illegal in the United States to send unsolicited faxes; why not extend the act to include unsolicited bulk e-mail?

6. The primary purpose of Passage 1 is to
- (A) make a comparison
 - (B) dispute a hypothesis
 - (C) settle a controversy
 - (D) justify a distinction
 - (E) highlight a concern
7. The primary purpose of Passage 2 is to
- (A) confirm a widely held belief
 - (B) discuss the inadequacies of a ruling
 - (C) defend a controversial technology
 - (D) analyze a widespread social problem
 - (E) lay the foundation for a course of action
8. What would be the most likely reaction by the author of Passage 1 to the argument cited in lines 16-21 of Passage 2 ("Nothing . . . another") ?
- (A) Surprise at the assumption that freedom of speech is indispensable to democracy
 - (B) Dismay at the Supreme Court's vigorous defense of vendors' rights
 - (C) Hope that the same reasoning would be applied to all unsolicited e-mail
 - (D) Concern for the plight of mass marketers facing substantial economic losses
 - (E) Appreciation for the political complexity of the debate about spam
9. Unlike the author of Passage 1, the author of Passage 2
- (A) criticizes a practice
 - (B) offers an example
 - (C) proposes a solution
 - (D) states an opinion
 - (E) quotes an expert



Questions 10-16 are based on the following passage.

The following passage is adapted from a novel set in the early twentieth century. Mr. Beebe, a clergyman, is speaking with Cecil Vyse about a mutual acquaintance, Lucy Honeychurch. Miss Honeychurch has recently returned from a journey with her older cousin and chaperone, Miss Bartlett.

“Lucy Honeychurch has no faults,” said Cecil, with grave sincerity.

“I quite agree. At present she has none.”

Line “At present?”

5 “I’m not cynical. I’m only thinking of my pet theory about Miss Honeychurch. Does it seem reasonable that she should play piano so wonderfully, and live so quietly? I suspect that someday she shall be wonderful in both. The water-tight compartments in her will break down, and music and life will mingle. Then we shall have her heroically good, heroically bad—too heroic, perhaps, to be good or bad.”

Cecil found his companion interesting.

15 “And at present you think her not wonderful as far as life goes?”

“Well, I must say I’ve only seen her at Tunbridge Wells, where she was not wonderful, and at Florence. She wasn’t wonderful in Florence either, but I kept on expecting that she would be.”

20 “In what way?”

Conversation had become agreeable to them, and they were pacing up and down the terrace.

“I could as easily tell you what tune she’ll play next. There was simply the sense that she found wings and meant to use them. I can show you a beautiful picture in my diary. Miss Honeychurch as a kite, Miss Bartlett holding the string. Picture number two: the string breaks.”

25 The sketch was in his diary, but it had been made afterwards, when he viewed things artistically. At the time he had given surreptitious tugs to the string himself.

30 “But the string never broke?”

“No. I mightn’t have seen Miss Honeychurch rise, but I should certainly have heard Miss Bartlett fall.”

35 “It has broken now,” said the young man in low, vibrating tones.

Immediately he realized that of all the conceited, ludicrous, contemptible ways of announcing an engagement this was the worst. He cursed his love of metaphor; had he suggested that he was a star and that Lucy was soaring up to reach him?

40 “Broken? What do you mean?”

“I meant,” Cecil said stiffly, “that she is going to marry me.”

45 The clergyman was conscious of some bitter disappointment which he could not keep out of his voice.

50 “I am sorry; I must apologize. I had no idea you were intimate with her, or I should never have talked in this flippant, superficial way. You ought to have stopped me.” And down in the garden he saw Lucy herself; yes, he was disappointed.

55 Cecil, who naturally preferred congratulations to apologies, drew down the corner of his mouth. Was this the reaction his action would get from the whole world? Of course, he despised the world as a whole; every thoughtful man should; it is almost a test of refinement.

60 “I’m sorry I have given you a shock,” he said dryly. “I fear that Lucy’s choice does not meet with your approval.”

10. Cecil’s remark in line 1 (“Lucy . . . faults”) is made in a tone of

- (A) great conviction
- (B) studied neutrality
- (C) playful irony
- (D) genuine surprise
- (E) weary cynicism

11. Mr. Beebe asks the question in lines 6-7 (“Does . . . quietly”) primarily in order to

- (A) raise an urgent concern
- (B) anticipate a possible objection
- (C) challenge a widely accepted theory
- (D) note an apparent inconsistency
- (E) criticize a popular pastime

12. Mr. Beebe’s statement, “The water-tight . . . bad” (lines 9-11), suggests that Lucy will

- (A) ultimately become a famous and respected musician
- (B) eventually play music in a less disciplined fashion
- (C) one day begin to live with great passion
- (D) soon regret an impetuous decision
- (E) someday marry a man who will be the cause of her undoing

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13. In line 24, “sense” most nearly means

- (A) definition
- (B) intelligence
- (C) plausibility
- (D) consensus
- (E) impression

14. For Mr. Beebe, “Picture number two” (line 27) represents

- (A) a misleading occurrence
- (B) a dangerous gamble
- (C) an unlikely development
- (D) an anticipated outcome
- (E) an avoidable difficulty

15. Ultimately, Cecil views his remark in line 34 (“It . . . now”) as

- (A) singularly poetic
- (B) particularly memorable
- (C) embarrassingly inapt
- (D) excessively critical
- (E) regrettably underhanded

16. The question in lines 39-40 (“had . . . him”) suggests that Cecil fears that Mr. Beebe will

- (A) detect the lack of originality in his thinking
- (B) consider him to be vain
- (C) tell Lucy of his inappropriate remark
- (D) distrust him as a confidant
- (E) attempt to block his engagement to Lucy



Questions 17-24 are based on the following passage.

The following passage is adapted from a book published in 1999.

Line 5 Calling it a cover-up would be far too dramatic. But for more than half a century—even in the midst of some of the greatest scientific achievements in history—physicists have been quietly aware of a dark cloud looming on a distant horizon. The problem is this: There are two foundational pillars upon which modern physics rests. One is general relativity, which provides a theoretical framework for understanding the universe on the largest of scales: stars, galaxies, clusters of galaxies, and beyond
10 to the immense expanse of the universe itself. The other is quantum mechanics, which provides a theoretical framework for understanding the universe on the smallest of scales: molecules, atoms, and all the way down to subatomic particles like electrons and quarks. Through
15 years of research, physicists have experimentally confirmed to almost unimaginable accuracy virtually all predictions made by each of these theories. But these same theoretical tools inexorably lead to another disturbing conclusion: As they are currently formulated, general relativity and
20 quantum mechanics *cannot both be right*. The two theories underlying the tremendous progress of physics during the last hundred years—progress that has explained the expansion of the heavens and the fundamental structure of matter—are mutually incompatible.

25 If you have not heard previously about this ferocious antagonism, you may be wondering why. The answer is not hard to come by. In all but the most extreme situations, physicists study things that are either small and light (like atoms and their constituents) or things that are huge and
30 heavy (like stars and galaxies), but not both. This means that they need use only quantum mechanics or only general relativity and can, with a furtive glance, shrug off the barking admonition of the other. For 50 years this approach has not been quite as blissful as ignorance, but it has been
35 pretty close.

But the universe *can* be extreme. In the central depths of a black hole, an enormous mass is crushed to a minuscule size. According to the big bang theory, the whole of the universe erupted from a microscopic nugget whose size
40 makes a grain of sand look colossal. These are realms that are tiny and yet incredibly massive, therefore requiring that both quantum mechanics and general relativity simultaneously be brought to bear. The equations of general relativity and quantum mechanics, when combined, begin
45 to shake, rattle, and gush with steam like a decrepit automobile. Put less figuratively, well-posed physical questions elicit nonsensical answers from the unhappy amalgam of

50 these two theories. Even if you are willing to keep the deep interior of a black hole and the beginning of the universe shrouded in mystery, you can't help feeling that the hostility between quantum mechanics and general relativity cries out for a deeper level of understanding. Can it really be that the universe at its most fundamental level is divided, requiring one set of laws when things are large and a different, incompatible set when things are
55 small?

Superstring theory, a young upstart compared with the venerable edifices of quantum mechanics and general relativity, answers with a resounding no. Intense research
60 over the past decade by physicists and mathematicians around the world has revealed that this new approach to describing matter at its most fundamental level resolves the tension between general relativity and quantum mechanics. In fact, superstring theory shows more:
65 within this new framework, general relativity and quantum mechanics require one another for the theory to make sense. According to superstring theory, the marriage of the laws of the large and the small is not only happy but inevitable. Superstring theory has the
70 potential to show that all of the wondrous happenings in the universe—from the frantic dance of subatomic quarks to the stately waltz of orbiting binary stars—are reflections of one grand physical principle, one master equation.

17. The “dark cloud” mentioned in line 4 refers to an
- (A) atypical diagnosis
 - (B) unsupported hypothesis
 - (C) unknown threat
 - (D) evil influence
 - (E) important contradiction
18. Which pairing best represents the different models of the universe presented in lines 7-14 ?
- (A) Big and little
 - (B) Old and new
 - (C) Complex and simple
 - (D) Verified and undocumented
 - (E) Theoretical and practical
19. The author’s use of italics in line 20 serves primarily to
- (A) draw attention to a commonly known hypothesis
 - (B) stress a speculative aspect of two theories
 - (C) support a difficult claim
 - (D) underscore a surprising point
 - (E) emphasize an area of agreement



20. The author uses the “automobile” (lines 45-46) to represent equations that
- (A) demand a professional’s attention
 - (B) are intrinsically unreliable
 - (C) do not work together effectively
 - (D) can be easily adjusted if necessary
 - (E) are based on dated mathematics
21. Which of the following, if available, would best refute the author’s assertion about the “young upstart” (line 57) ?
- (A) Evidence that certain kinds of particles in nature exceed the speed of light
 - (B) Confirmation of conditions that existed in the earliest stages of the big bang
 - (C) Speculation that the deep interior of a black hole is not as dense as scientists have believed
 - (D) Mathematical formulas that link general relativity and quantum mechanics in the same realm
 - (E) Proof that the laws governing the universe depend on the size of the system being studied
22. The primary reason described for the usefulness of the theory mentioned in line 57 is its ability to
- (A) explain new phenomena
 - (B) replace the theory of general relativity
 - (C) reinforce the predictions of quantum mechanics
 - (D) indicate where other theories are inapplicable
 - (E) reconcile two seemingly contradictory theories
23. Those who hold the “conclusion” referred to in line 18 would most likely believe that the “marriage” (line 68) was an
- (A) inevitable result of their research
 - (B) unjustifiable elevation of their hypotheses
 - (C) inadvisable use of research funds
 - (D) unfortunate consequence
 - (E) impossible outcome
24. The author uses dance imagery in lines 71-72 in order to
- (A) suggest a similarity between the study of science and the study of dance
 - (B) highlight the extremes found in the physical world
 - (C) emphasize the different ways that binary stars move
 - (D) illustrate the intricacy of the subatomic world of quarks
 - (E) suggest the cohesive nature of both science and dance

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

SECTION 5
Time — 25 minutes
35 Questions

Turn to Section 5 (page 5) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

The following sentences test correctness and effectiveness of expression. Part of each sentence or the entire sentence is underlined; beneath each sentence are five ways of phrasing the underlined material. Choice A repeats the original phrasing; the other four choices are different. If you think the original phrasing produces a better sentence than any of the alternatives, select choice A; if not, select one of the other choices.

In making your selection, follow the requirements of standard written English; that is, pay attention to grammar, choice of words, sentence construction, and punctuation. Your selection should result in the most effective sentence—clear and precise, without awkwardness or ambiguity.

EXAMPLE:

Laura Ingalls Wilder published her first book and she was sixty-five years old then.

- (A) and she was sixty-five years old then
- (B) when she was sixty-five
- (C) at age sixty-five years old
- (D) upon the reaching of sixty-five years
- (E) at the time when she was sixty-five

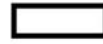
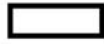
A B C D E

1. Since last September Patricia has been working at the convenience store down the road.
 - (A) has been working
 - (B) works
 - (C) is working
 - (D) will be working
 - (E) worked
2. To help freshmen and sophomores in selecting their courses, candid reviews of courses and instructors compiled by juniors and seniors.
 - (A) candid reviews of courses and instructors compiled by juniors and seniors
 - (B) candid reviews of courses and instructors being compiled by juniors and seniors
 - (C) and to compile candid reviews of courses and instructors by juniors and seniors
 - (D) juniors and seniors have compiled candid reviews of courses and instructors
 - (E) with juniors and seniors compiling candid reviews of courses and instructors
3. The landscape artist who designed New York City's Central Park believed that providing scenic settings accessible to all would not only benefit the public's physical and mental health and also foster a sense of democracy.
 - (A) and also foster a sense of democracy
 - (B) as it also fosters a sense of democracy
 - (C) and would foster a sense of democracy also
 - (D) but also foster a sense of democracy
 - (E) and foster a sense of democracy also
4. In areas where deer roam freely, residents must dress to protect themselves against deer ticks that might transmit diseases.
 - (A) areas where deer roam freely
 - (B) areas roamed by deer freely
 - (C) areas, freely roamed by deer
 - (D) areas, in which there are deer that roam freely
 - (E) areas which deer roam free

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5. Given the cost of a hardcover book, the price of it typically hovers around \$25, many consumers ask their book dealers, “When will the paperback be out?”
- (A) the price of it typically hovers
(B) and typically it hovers at a price
(C) which typically hovers
(D) in that it typically hovers
(E) they typically hover
6. The article featured the Sea Islands because many were known there to live much as their ancestors of a century ago had lived.
- (A) many were known there to live
(B) they were known there for living
(C) many of the people there were known to live
(D) of the many people, they were there living
(E) of knowing that many people lived there
7. A poetic form congenial to Robert Browning was the dramatic monologue, it let him explore a character’s mind without the simplifications demanded by stage productions.
- (A) monologue, it let him explore
(B) monologue, which let him explore
(C) monologue that lets him explore
(D) monologue; letting him explore
(E) monologue by letting him do exploration of
8. Many eighteenth- and nineteenth-century Romantic poets were believers in rebellion against social conventions, express strong emotion, and the power of imagination.
- (A) were believers in rebellion against social conventions, express strong emotion
(B) are believers in rebelling against social conventions, strong emotions being expressed
(C) who believed in rebellion against social conventions, express strong emotion
(D) believed in rebellion against social conventions, to express strong emotions
(E) believed in rebellion against social conventions, the expression of strong emotions
9. At the Constitutional Convention of 1787, the proposal to replace the existing Articles of Confederation with a federal constitution were met with fierce opposition.
- (A) were met with
(B) having been met with
(C) it met
(D) met with
(E) met their
10. When for the first time the United States imported more oil than it exported, Americans should have realized that an energy crisis was imminent and could happen in the future.
- (A) was imminent and could happen in the future
(B) could happen imminently in the future
(C) will be imminent and happening soon
(D) is an imminent thing
(E) might be imminent
11. Intimacy, love, and marriage are three different, if interrelated, subjects.
- (A) different, if interrelated, subjects
(B) interrelated subjects, being, however, different
(C) different subjects, whereas they are interrelated
(D) different subjects when interrelated
(E) subjects that are different although being interrelated



The following sentences test your ability to recognize grammar and usage errors. Each sentence contains either a single error or no error at all. No sentence contains more than one error. The error, if there is one, is underlined and lettered. If the sentence contains an error, select the one underlined part that must be changed to make the sentence correct. If the sentence is correct, select choice E. In choosing answers, follow the requirements of standard written English.

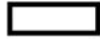
EXAMPLE:

The other delegates and him immediately
 A B C
 accepted the resolution drafted by the
 D
 neutral states. No error
 E

(A) ● (C) (D) (E)

12. America's first roller coaster ride, which opened in
 A
 1884 at Coney Island, Brooklyn, and capable of
 B
 a top speed of only six miles per hour. No error
 C D E
13. The inflation rate in that country is so high that
 A
even with adjusted wages, most workers can barely
 B C D
 pay for food and shelter. No error
 E
14. Over the past two years, apparel manufacturers have
 A B
 worked to meeting the revised federal standards
 C
for the design of uniforms. No error
 D E
15. Storing bread in the refrigerator delays drying and the
 A
 growth of mold but increase the rate at which the
 B C
 bread loses flavor. No error
 D E
16. According to last week's survey, most voters
were disappointed by legislators' inability working
 A B C
together on key issues. No error
 D E
17. When Marie Curie shared the 1903 Nobel Prize for
 A
 Physics with two other scientists—her husband
 B
 Pierre Curie and Henri Becquerel—she had been
 C
 the first woman to win the prize. No error
 D E
18. Every spring in rural Vermont the sound of sap
 A
dripping into galvanized metal buckets signal the
 B C
 beginning of the traditional season for gathering
 D
 maple syrup. No error
 E
19. Those investors who sold stocks just before the
 A B
 stock market crashed in 1929 were either wise or
 C
exceptional lucky. No error
 D E

GO ON TO THE NEXT PAGE 



20. Most of the sediment and nutrients of the Mississippi River no longer reach the coastal wetlands, a phenomenon that has adversely affected the region's ecological balance.
- A
B
C D
No error
E
21. Most major air pollutants cannot be seen, although large amounts of them concentrated in cities are visible as smog. No error
- A B
C D E
22. The light emitted by high-intensity-discharge car headlights are very effective in activating the reflective paints of road markers, thereby making driving at night safer. No error
- A B
C
D E
23. During the nineteenth century, Greek mythology acquired renewed significance when both poets and painters turned to the ancient myths for subject matter. No error
- A B
C D
E
24. The museum is submitting proposals to several foundations in the hope to gain funds to build a tropical butterfly conservatory. No error
- A B
C D
E
25. In order for the audience to believe in and be engaged by a Shakespearean character, they have to come across as a real person on the stage. No error
- A B
C D
E
26. Most of the hypotheses that Kepler developed to explain physical forces were later rejected as inconsistent to Newtonian theory. No error
- A B
C
D E
27. Lynn Margulis's theory that evolution is a process involving interdependency rather than competition among organisms differs dramatically from most biologists. No error
- A
B C
D E
28. The Empire State Building, the Sears Tower, the Canadian National Tower—each of these structures was the tallest in the world at the time they were built. No error
- A B C D
E
29. The cost of safely disposing of the toxic chemicals is approximately five times what the company paid to purchase it. No error
- A B C
D E

Directions: The following passage is an early draft of an essay. Some parts of the passage need to be rewritten.

Read the passage and select the best answers for the questions that follow. Some questions are about particular sentences or parts of sentences and ask you to improve sentence structure or word choice. Other questions ask you to consider organization and development. In choosing answers, follow the requirements of standard written English.

Questions 30-35 refer to the following passage.

(1) On September 10, 1973, the United States Postal Service issued a stamp honoring Henry Ossawa Tanner (1859-1937), one of four stamps in the American Arts series. (2) Acclaimed as an artist in the United States and Europe at the turn of the century, Tanner was called the “dean” of art by W. E. B. Du Bois. (3) But after his death, Tanner’s work was largely forgotten. (4) And so it remained, and even later, in 1969, the donation of one of his paintings to the Smithsonian Institution aroused new interest in the art of this American master. (5) Now his works are on exhibit again. (6) You can even buy posters of his paintings!

(7) One of his most famous works is a realistic painting by the name of “The Banjo Lesson.” (8) It was inspired by a poem of Paul Laurence Dunbar. (9) The painting isn’t like a photograph. (10) The magnificence of his work can be seen with each subtle brush stroke, each carefully crafted detail. (11) The effect is truly beautiful. (12) If I were to try to identify the dominant theme of the painting, I would have to say that it is family cohesiveness because the entire scene seems to emphasize the bond between the boy and his grandfather.

30. Which is the best version of the underlined part of sentence 2 (reproduced below) ?

Acclaimed as an artist in the United States and Europe at the turn of the century, Tanner was called the “dean” of art by W. E. B. Du Bois.

- (A) (as it is now)
(B) century; Tanner was called the “dean” of art by W. E. B. Du Bois
(C) century, Tanner, who was called “dean” of art by W. E. B. Du Bois
(D) century, W. E. B. Du Bois calling Tanner the “dean” of art
(E) century, it was W. E. B. Du Bois who called Tanner the “dean” of art

31. Which is the best version of the underlined portion of sentence 4 (reproduced below) ?

And so it remained, and even later, in 1969, the donation of one of his paintings to the Smithsonian Institution aroused new interest in the art of this American master.

- (A) (as it is now)
(B) remained, and even after that, in 1969,
(C) remained, but even then, in 1969,
(D) remained until 1969, when
(E) remained when in 1969
32. In context, which is the best revision of sentence 6 (reproduced below) ?
- You can even buy posters of his paintings!*
- (A) It is amazing, you can buy posters of his paintings.
(B) Even ordinary people like us can buy posters of his paintings.
(C) Posters of his paintings had been sold.
(D) People can even buy his paintings as a poster.
(E) One can even buy posters of his paintings.

GO ON TO THE NEXT PAGE 

33. In context, which is the best way to revise sentence 7 (reproduced below) ?

One of his most famous works is a realistic painting by the name of "The Banjo Lesson."

- (A) Add "In contrast," to the beginning of the sentence.
- (B) Change "a realistic painting by the name of" to "the realistic painting".
- (C) Delete the words "of his most famous works".
- (D) Change "is" to "had been".
- (E) Delete "most famous".

35. Which is best to add to the beginning of sentence 9 ?

- (A) Although it is realistic,
- (B) You can almost hear the music, but
- (C) Photographs have a beauty of their own, but
- (D) As a lifelike work,
- (E) Some people just copy what they see;

34. Which sentence is best inserted after sentence 7 ?

- (A) The painting shows a man teaching his grandson how to play the banjo.
- (B) He finished "The Banjo Lesson" in 1893.
- (C) In the painting, a bright light sets off the man and boy.
- (D) Banjos came to the United States from West Africa.
- (E) Portraits by Tanner show a psychological depth and compassion.

S T O P

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.**



SECTION 6

Time — 25 minutes
18 Questions

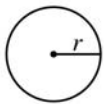
Turn to Section 6 (page 6) of your answer sheet to answer the questions in this section.

Directions: This section contains two types of questions. You have 25 minutes to complete both types. For questions 1-8, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratchwork.

Notes

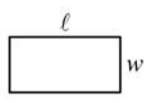
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function f is assumed to be the set of all real numbers x for which $f(x)$ is a real number.

Reference Information

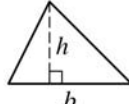


$$A = \pi r^2$$

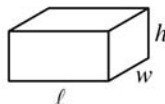
$$C = 2\pi r$$



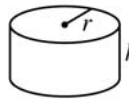
$$A = \ell w$$



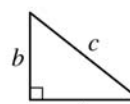
$$A = \frac{1}{2}bh$$



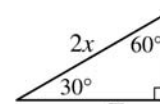
$$V = \ell wh$$



$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



$$x\sqrt{3}$$



Special Right Triangles

The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

4, 11, 18, ...

1. In the sequence above, the first term is 4 and each term after the first is 7 more than the previous term. What is the 12th term of the sequence?

- (A) 77
(B) 81
(C) 84
(D) 86
(E) 92

2. If $(x - 2)^2 = 49$, then x could be

- (A) -9
(B) -7
(C) 2
(D) 5
(E) 9

3. The average (arithmetic mean) of t and y is 15, and the average of w and x is 15. What is the average of t , w , x , and y ?

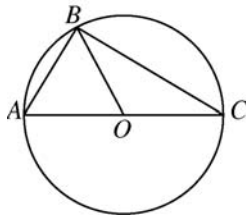
- (A) 7.5
(B) 15
(C) 22.5
(D) 30
(E) 60

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All of Kay's brothers can swim.

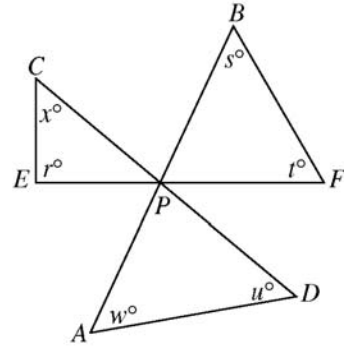
4. If the statement above is true, which of the following must also be true?
- (A) If Fred cannot swim, then he is not Kay's brother.
 (B) If Dave can swim, then he is not Kay's brother.
 (C) If Walt can swim, then he is Kay's brother.
 (D) If Pete is Kay's brother, then he cannot swim.
 (E) If Mark is not Kay's brother, then he cannot swim.



5. In the figure above, triangle ABC is inscribed in the circle with center O and diameter \overline{AC} . If $AB = AO$, what is the degree measure of $\angle ABO$?
- (A) 15°
 (B) 30°
 (C) 45°
 (D) 60°
 (E) 90°

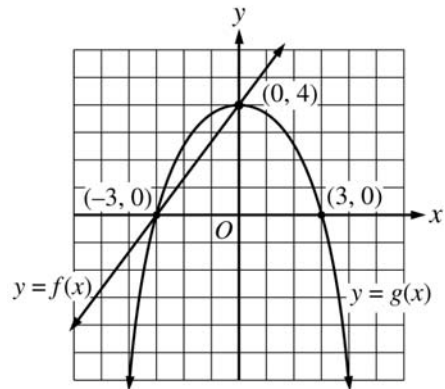
6. Each of the following is equivalent to $\frac{a}{b}(bc + k)$ EXCEPT

- (A) $a\left(\frac{c+k}{b}\right)$
 (B) $a\left(c + \frac{k}{b}\right)$
 (C) $\frac{a}{b}(k + bc)$
 (D) $ac + \frac{ak}{b}$
 (E) $\frac{abc + ak}{b}$



Note: Figure not drawn to scale.

7. In the figure above, \overline{AB} , \overline{CD} , and \overline{EF} intersect at P . If $r = 90$, $s = 50$, $t = 60$, $u = 45$, and $w = 50$, what is the value of x ?
- (A) 45
 (B) 50
 (C) 65
 (D) 75
 (E) It cannot be determined from the information given.



8. Based on the portions of the graphs of the functions f and g shown above, what are all values of x between -6 and 6 for which $g(x) > f(x)$?
- (A) $-6 < x < -3$ only
 (B) $-3 < x < 0$ only
 (C) $0 < x < 3$ only
 (D) $3 < x < 6$ only
 (E) $-6 < x < -3$ and $0 < x < 3$

GO ON TO THE NEXT PAGE



Directions: For Student-Produced Response questions 9-18, use the grids at the bottom of the answer sheet page on which you have answered questions 1-8.

Each of the remaining 10 questions requires you to solve the problem and enter your answer by marking the circles in the special grid, as shown in the examples below. You may use any available space for scratchwork.

Write answer in boxes. →

Grid in result. →

← Fraction line

← Decimal point

Answer: $\frac{7}{12}$

Answer: 2.5

Answer: 201
Either position is correct.

Note: You may start your answers in any column, space permitting. Columns not needed should be left blank.

- Mark no more than one circle in any column.
 - Because the answer sheet will be machine-scored, **you will receive credit only if the circles are filled in correctly.**
 - Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately.
 - Some problems may have more than one correct answer. In such cases, grid only one answer.
 - No question has a negative answer.
 - **Mixed numbers** such as $3\frac{1}{2}$ must be gridded as 3.5 or $7/2$. (If $\frac{31}{2}$ is gridded, it will be interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)
 - **Decimal Answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid. For example, if you obtain an answer such as 0.6666..., you should record your result as .666 or .667. **A less accurate value such as .66 or .67 will be scored as incorrect.**
- Acceptable ways to grid $\frac{2}{3}$ are:
-

9. When her son's class held its magazine drive, Dr. Nelson bought 7 one-year magazine subscriptions for the waiting room in her office. She bought 4 subscriptions that have 12 issues per year, 2 subscriptions that have 4 issues per year, and 1 subscription that has 52 issues per year. Altogether, how many magazines will her office receive from these subscriptions?

10. Three more than twice a number is equal to 4. What is the number?

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SALES OF BOOK *B*

	Total Number of Copies Sold
End of 1st week	3200
End of 2nd week	5500
End of 3rd week	6800
End of 4th week	7400
End of 5th week	7700

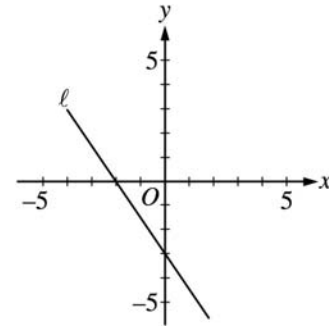
11. The table above shows the total number of copies of Book *B* that were sold by the end of each of the first 5 weeks of its publication. How many copies of the book were sold during the 3rd week of its publication?

12. If $\frac{j}{k} = 32$ and $k = \frac{3}{2}$, what is the value of $\frac{1}{2}j$?

$$\begin{aligned}x + y + 3z &= 600 \\x + y + z &= 400\end{aligned}$$

13. In the system of equations above, what is the value of $x + y$?

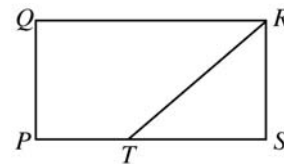
14. There are 25 trays on a table in the cafeteria. Each tray contains a cup only, a plate only, or both a cup and a plate. If 15 of the trays contain cups and 21 of the trays contain plates, how many contain both a cup and a plate?



15. In the figure above, line ℓ intersects the x -axis at $x = -2$ and the y -axis at $y = -3$. If line m (not shown) passes through the origin and is perpendicular to line ℓ , what is the slope of line m ?

16. If $6 < |x - 3| < 7$ and $x < 0$, what is one possible value of $|x|$?

17. What is the product of the smallest prime number that is greater than 50 and the greatest prime number that is less than 50?



18. In the figure above, $PQRS$ is a rectangle. The area of $\triangle RST$ is 7 and $PT = \frac{2}{5}PS$. What is the area of $PQRS$?

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.



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SECTION 7

Time — 25 minutes

24 Questions

Turn to Section 7 (page 6) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . useful
- (B) end . . divisive
- (C) overcome . . unattractive
- (D) extend . . satisfactory
- (E) resolve . . acceptable

(A) (B) (C) (D)

1. Years of ----- lifting of heavy furniture had left him too ----- to be able to stand erect for long periods of time.
 - (A) profitable . . dumbfounded
 - (B) generous . . distracted
 - (C) onerous . . hesitant
 - (D) strenuous . . debilitated
 - (E) unstinting . . eminent
2. Canadian Lynn Johnston was named Cartoonist of the Year in 1985, the first woman to be so ----- .
 - (A) inspired (B) entrusted (C) honored
 - (D) employed (E) refined
3. Because the photographer believed that wild animals should be ----- only in their various natural surroundings, she ----- often in her career.
 - (A) depicted . . traveled
 - (B) displayed . . spoke
 - (C) captured . . protested
 - (D) domesticated . . roamed
 - (E) represented . . publicized
4. Folk painter Grandma Moses has become such an enduring icon that many consider her ----- of America.
 - (A) an innovator (B) an emblem
 - (C) a successor (D) a detractor
 - (E) a lobbyist
5. Whether substances are medicines or poisons often depends on dosage, for substances that are ----- in small doses can be ----- in large.
 - (A) useless . . effective
 - (B) mild . . benign
 - (C) curative . . toxic
 - (D) harmful . . fatal
 - (E) beneficial . . miraculous
6. Critics dismissed the engineer's seemingly creative design as being -----, that is, underdeveloped and lacking in sophistication.
 - (A) defunct (B) unorthodox (C) simplistic
 - (D) erroneous (E) ambiguous
7. The professor commented to other faculty members that Sheila seemed temperamentally suited to the study of logic, given her ----- for ----- intricate arguments.
 - (A) sympathy . . influencing
 - (B) penchant . . evading
 - (C) disregard . . unhinging
 - (D) contempt . . following
 - (E) bent . . analyzing
8. While traveling near the Sun, the comet Hale-Bopp produced a ----- amount of dust, much more than the comets Halley or Hyakutake.
 - (A) voracious (B) disposable (C) redundant
 - (D) superficial (E) prodigious

GO ON TO THE NEXT PAGE



The passages below are followed by questions based on their content; questions following a pair of related passages may also be based on the relationship between the paired passages. Answer the questions on the basis of what is stated or implied in the passages and in any introductory material that may be provided.

Questions 9-10 are based on the following passage.

Line Newspaper editor and political commentator Henry
Louis Mencken was a force of nature, brushing aside
all objects animal and mineral in his headlong rush
5 to the publicity that surely awaited him. He seized
each day, shook it to within an inch of its life, and
then gaily went on to the next. No matter where his
writing appeared, it was quoted widely, his pungently
outspoken opinions debated hotly. Nobody else could
10 make so many people so angry, or make so many others
laugh so hard.

9. In lines 4-5, the words “seized” and “shook” help establish which aspect of Mencken’s personality?

- (A) His code of honor
- (B) His sense of humor
- (C) His vindictiveness
- (D) His intensity
- (E) His petulance

10. The public response described in lines 6-8 most strongly suggests that Mencken’s writings were

- (A) authoritative
- (B) controversial
- (C) arrogant
- (D) informal
- (E) frivolous

Questions 11-12 are based on the following passage.

Line The ability to see the situation as your opponents see it,
as difficult as it may be, is one of the most important skills
that you can possess as a negotiator. You must know more
5 than simply that they see things differently. It is not
enough to study them like beetles under a microscope;
you need to know what it feels like to be a beetle. To
accomplish this you should be prepared to withhold
judgment as you “try on” their views. Your opponents
10 may well believe that their views are right as strongly
as you believe yours are.

11. The reference to beetles in lines 5-6 serves to suggest that

- (A) people need to be more attuned to their surroundings
- (B) effective negotiation is more of a science than an art
- (C) people can be made to do what they would prefer not to do
- (D) effective negotiation requires identifying with a different viewpoint
- (E) people feel uncomfortable when their actions are under scrutiny

12. The primary purpose of the passage is to

- (A) persuade people to defend their positions on critical issues
- (B) indicate a specific ability that is useful in negotiation
- (C) encourage people to be more accepting of others
- (D) argue that few people are fit for the demands of negotiation
- (E) suggest that negotiators should always seek consensus



Questions 13-24 are based on the following passages.

Passage 1 is from a 2003 book that examines the famous “I Have a Dream” speech delivered by Martin Luther King, Jr. at the historic March on Washington in August 1963. Passage 2 is from a 2000 biography of Martin Luther King, Jr. written by an African American scholar.

Passage 1

Line 5 The ability of the “I Have a Dream” speech to highlight King’s early career at the expense of his later career accounts for the tone of impatience and betrayal that often appears when modern-day supporters of King’s agenda talk about the speech. Former Georgia state legislator Julian Bond said in 1986 that commemorations of King seemed to “focus almost entirely on Martin Luther King the dreamer, not on Martin King the antiwar activist, not on Martin King the challenger of the economic order, not on Martin King the opponent of apartheid, not on the complete Martin Luther King.” One King scholar has proposed a ten-year moratorium on reading or listening to the “I Have a Dream” speech, in the hopes that America will then discover the rest of King’s legacy.

15 This proposal effectively concedes that King’s magnificent address cannot be recovered from the misuse and overquotation it has suffered since his death. But it is not clear that this is so. Even now, upon hearing the speech, one is struck by the many forms of King’s genius. Many people can still remember the first time they heard “I Have a Dream,” and they tend to speak of that memory with the reverence reserved for a religious experience. At the very least, reflecting on the “I Have a Dream” speech should be an opportunity to be grateful for the astonishing transformation of America that the freedom movement wrought. In just under a decade, the civil rights movement brought down a system of segregation that stood essentially unaltered since Reconstruction. King’s dreams of an America free from racial discrimination are still some distance away, but it is astounding how far the nation has come since that hot August day in 1963. Segregation in the South has been dismantled; there are no longer “Whites Only” signs; segregationist governors do not try to prevent Black children from entering public schools. Toward the end of his life, King preached a sermon entitled “Ingratitude,” in which he called ingratitude “one of the greatest of all sins,” because the sinner “fail[s] to realize his dependence on others.” The annual Martin Luther King holiday is properly a day of national thanksgiving, a time for the nation to recognize the immense debt it owes to King and the thousands of heroes of the civil rights movement for saving the soul of America.

Passage 2

45 Martin Luther King was at his best when he was willing to reshape the wisdom of many of his intellectual predecessors. He ingeniously harnessed their ideas to his views to advocate sweeping social change. He believed that his early views on race failed to challenge America fundamentally. He later confessed that he had underestimated how deeply entrenched racism was in America. If Black Americans could not depend on goodwill to create social change, they had to provoke social change through bigger efforts at nonviolent direct action. This meant that Blacks and their allies had to obtain political power. They also had to try to restructure American society, solving the riddles of poverty and economic inequality.

50 This is not the image of King that is celebrated on Martin Luther King Day. Many of King’s admirers are uncomfortable with a focus on his mature beliefs. They seek to deflect unfair attacks on King’s legacy by shrouding him in the cloth of superhuman heroism. In truth, this shroud is little more than romantic tissue. King’s image has often suffered a sad fate. His strengths have been needlessly exaggerated, his weaknesses wildly overplayed. King’s true legacy has been lost to cultural amnesia. As a nation, we have emphasized King’s aspiration to save America through inspiring words and sacrificial deeds. Time and again we replay the powerful image of King standing on a national stage in the shadow of the Lincoln Memorial mouthing perhaps the most famous four words ever uttered by a Black American: “I have a dream.” For most Americans, those words capture King’s unique genius. They express his immortal longing for freedom, a longing that is familiar to every person who dares imagine a future beyond unjust laws and unfair customs. The edifying universality of those four words—who hasn’t dreamed, and who cannot identify with people whose dreams of a better world are punished with violence?—helps to explain their durability. But those words survive, too, because they comfort folk who would rather entertain the dreams of unfree people than confront their rage and despair.

13. The authors of both passages agree that King’s “I Have a Dream” speech

- (A) had significant global as well as national influence
- (B) has been imitated by many of King’s followers
- (C) had a profound impact on many Americans
- (D) was typical of King’s thought as a whole
- (E) questioned the ethical beliefs of many Americans

GO ON TO THE NEXT PAGE



14. It can be inferred that, for Julian Bond, a portrait of “the complete Martin Luther King” (lines 10-11) would
- (A) celebrate King’s influence both within and outside the United States
 - (B) acknowledge the logical lapses in some of King’s later work
 - (C) compare King with other significant figures of his era
 - (D) achieve a balance between King’s earlier concerns and his later ones
 - (E) reveal information about King’s personal as well as his public life
15. The author of Passage 2 would most likely view Julian Bond’s statement in lines 7-11 of Passage 1 with
- (A) outright disapproval
 - (B) considerable surprise
 - (C) cynical mistrust
 - (D) cautious optimism
 - (E) complete agreement
16. In line 17, “suffered” most nearly means
- (A) endured
 - (B) felt
 - (C) prolonged
 - (D) tolerated
 - (E) lamented
17. Lines 31-34 (“Segregation in . . . schools”) serve primarily to
- (A) express ambitious hopes for the future
 - (B) challenge the accuracy of historical accounts
 - (C) provide a contrast with other cultures
 - (D) illustrate a point with particular examples
 - (E) defend a series of unusual occurrences
18. The author of Passage 1 mentions the “sermon” (line 35) primarily in order to
- (A) show King’s effectiveness as a public speaker
 - (B) demonstrate the broad range of King’s interests
 - (C) illustrate an important trait that King possessed
 - (D) question King’s ability to empathize with others
 - (E) remind readers of a significant obligation to King
19. The author of Passage 2 would most likely characterize the view of King expressed in lines 38-42 of Passage 1 (“The annual . . . America”) as
- (A) contradictory
 - (B) insightful
 - (C) atypical
 - (D) simplistic
 - (E) arrogant
20. Lines 57-58 (“This is . . . Day”) mark a transition within Passage 2 from a
- (A) consideration of King’s views to a critique of people’s understanding of them
 - (B) challenge to King’s beliefs to an acceptance of their cultural resonance
 - (C) discussion of King’s intellectual predecessors to an analysis of his legacy
 - (D) celebration of King’s strengths to an examination of his weaknesses
 - (E) defense of King’s aspirations to an attack on those who fail to support them
21. Lines 76-79 in Passage 2 (“The edifying . . . durability”) are best described as
- (A) contesting the notion of King’s historical importance that is advanced by the author of Passage 1
 - (B) providing an explanation for the view of King’s speech that is expressed by the author of Passage 1
 - (C) challenging the portrait of the civil rights movement that is presented by the author of Passage 1
 - (D) offering a humorous anecdote that supports a statement made by the author of Passage 1
 - (E) dismissing a perspective that is similarly rejected by the author of Passage 1
22. Unlike the author of Passage 2, the author of Passage 1 develops his or her argument by
- (A) citing an authority with whom he or she disagrees
 - (B) referring to a famous speech delivered by King
 - (C) discussing the universal human trait of dreaming
 - (D) dismissing those who fail to understand the subtlety of King’s thought
 - (E) assuming that his or her readers are completely unfamiliar with King’s ideas



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23. The author of Passage 2 would most likely argue that commemorations focus on “Martin Luther King the dreamer” (line 7 of Passage 1) because people find this aspect of King to be
- (A) courageous
 - (B) unpretentious
 - (C) reassuring
 - (D) provocative
 - (E) unexpected
24. Which best characterizes the overall relationship between the two passages?
- (A) Passage 2 rejects the political goals that are described in Passage 1.
 - (B) Passage 2 helps account for the responses to a speech discussed in Passage 1.
 - (C) Passage 2 romanticizes a person who is objectively depicted in Passage 1.
 - (D) Passage 2 recounts the history of a national holiday that is celebrated in Passage 1.
 - (E) Passage 2 reflects on a figure who is denounced in Passage 1.

S T O P

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.



SECTION 8
Time — 20 minutes
16 Questions

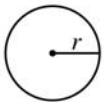
Turn to Section 8 (page 7) of your answer sheet to answer the questions in this section.

Directions: For this section, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratchwork.

Notes

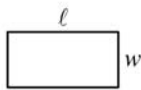
1. The use of a calculator is permitted.
2. All numbers used are real numbers.
3. Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
4. Unless otherwise specified, the domain of any function f is assumed to be the set of all real numbers x for which $f(x)$ is a real number.

Reference Information

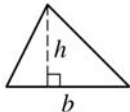


$$A = \pi r^2$$

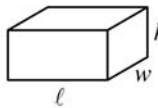
$$C = 2\pi r$$



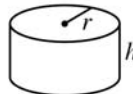
$$A = \ell w$$



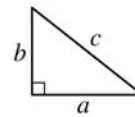
$$A = \frac{1}{2}bh$$



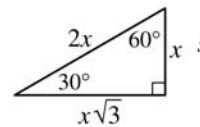
$$V = \ell wh$$



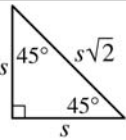
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.

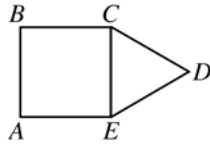
The sum of the measures in degrees of the angles of a triangle is 180.

1. On Wednesday Heather ran 3 miles in 30 minutes. If she ran for 45 minutes at this rate on Thursday, how far did Heather run on Thursday?
 - (A) 3.5 miles
 - (B) 4 miles
 - (C) 4.5 miles
 - (D) 5 miles
 - (E) 5.5 miles

2. If $(2m)k = 6$, then $mk =$
 - (A) 3
 - (B) 4
 - (C) 5
 - (D) 6
 - (E) 12

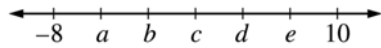
3. If 3 times a number is equal to $\frac{3}{2}$, what is the number?
 - (A) $\frac{1}{3}$
 - (B) $\frac{1}{2}$
 - (C) $\frac{2}{3}$
 - (D) 2
 - (E) 3

GO ON TO THE NEXT PAGE



4. In the figure above, CDE is an equilateral triangle and $ABCE$ is a square with an area of 1. What is the perimeter of polygon $ABCDE$?

- (A) 4
(B) 5
(C) 6
(D) 7
(E) 8



5. On the number line above, the tick marks are equally spaced and their coordinates are shown. Of these coordinates, which has the smallest positive value?

- (A) a
(B) b
(C) c
(D) d
(E) e

10, 18, 4, 15, 3, 21, x

6. If x is the median of the 7 numbers listed above, which of the following could be the value of x ?

- (A) 5
(B) 8
(C) 9
(D) 14
(E) 16

7. Two spheres, one with radius 7 and one with radius 4, are tangent to each other. If P is any point on one sphere and Q is any point on the other sphere, what is the maximum possible length of PQ ?

- (A) 7
(B) 11
(C) 14
(D) 18
(E) 22

NUMBER OF PREMIUM MEMBERS

Year	2000	2001	2002
Store A	250	400	750
Store B	500	1,000	1,250

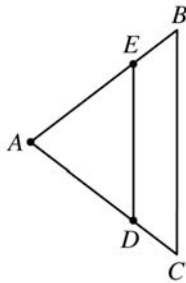
AVERAGE NUMBER OF VIDEO
RENTALS PER PREMIUM MEMBER
AT STORE B

Year	Rentals
2000	12
2001	15
2002	20

8. The first table above shows the number of premium members at two video rental stores, A and B , during the years 2000–2002. The second table shows the average (arithmetic mean) number of video rentals per premium member at store B during each of those years. Based on this information, which of the following best approximates the total number of video rentals by premium members at Store B during the years 2000–2002?

- (A) 24,000
(B) 46,000
(C) 58,000
(D) 70,000
(E) 130,000

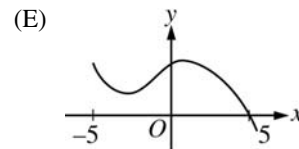
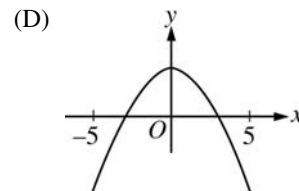
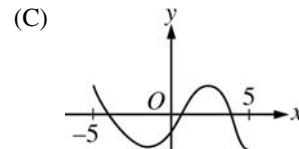
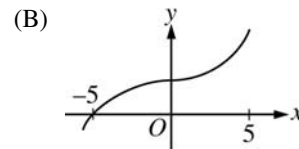
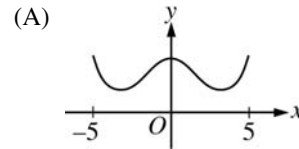
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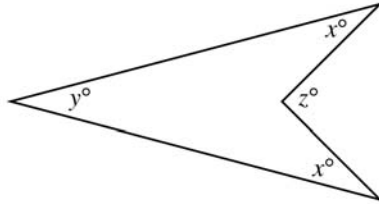


Note: Figure not drawn to scale.

9. In $\triangle ABC$ above, $AB = AC$, E is the midpoint of \overline{AB} , and D is the midpoint of \overline{AC} . If $AE = x$ and $ED = 4$, what is length BC ?
- (A) 6
 (B) 8
 (C) $2x$
 (D) $4x$
 (E) $4x^2$
-
10. A student was given a piece of rope and told to cut it into two equal pieces, keep one piece, and pass the other piece to the next student. Each student was to repeat this process until every student in the class had exactly one piece of rope. Which of the following could be the fraction of the original rope that one of the students had?
- (A) $\frac{1}{14}$
 (B) $\frac{1}{15}$
 (C) $\frac{1}{16}$
 (D) $\frac{1}{17}$
 (E) $\frac{1}{18}$

11. Which of the following is the graph of a function f such that $f(x) = 0$ for exactly two values of x between -5 and 5 ?





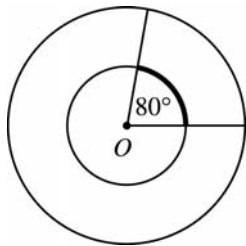
Note: Figure not drawn to scale.

12. If $x = 20$ and $y = 30$ in the figure above, what is the value of z ?

(A) 60
(B) 70
(C) 80
(D) 90
(E) 100

13. If x and y are integers, $7 < y < 16$, and $\frac{x}{y} = \frac{2}{5}$, how many possible values are there for x ?

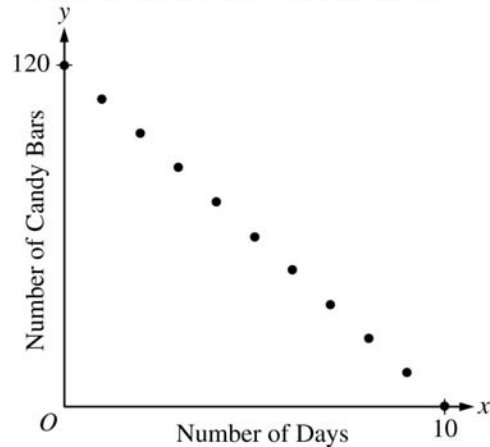
(A) One
(B) Two
(C) Three
(D) Four
(E) Five



14. Point O is the center of both circles in the figure above. If the circumference of the large circle is 36 and the radius of the small circle is half of the radius of the large circle, what is the length of the darkened arc?

(A) 10
(B) 8
(C) 6
(D) 4
(E) 2

GEORGE'S UNSOLD CANDY BARS



15. The graph above shows the number of George's unsold candy bars over a 10-day period. The points on the graph all lie on which of the following lines?

(A) $y = 10x - 120$
(B) $y = 10x + 120$
(C) $y = 12x - 120$
(D) $y = 120 - 10x$
(E) $y = 120 - 12x$

16. Let ∇x be defined as $x + \frac{1}{x}$ for all nonzero integers x . If $\nabla x = t$, where t is an integer, which of the following is a possible value of t ?

(A) 1
(B) 0
(C) -1
(D) -2
(E) -3

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.

**SECTION 9**

Time — 20 minutes

19 Questions

Turn to Section 9 (page 7) of your answer sheet to answer the questions in this section.**Directions:** For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

Example:

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . useful
 (B) end . . divisive
 (C) overcome . . unattractive
 (D) extend . . satisfactory
 (E) resolve . . acceptable

(A) (B) (C) (D)

- The writer came to be labeled ----- because she isolated herself in her apartment, shunning outside contact.
 (A) a loner (B) a miser (C) a connoisseur
 (D) a conspirator (E) an ingenue
- Some Tibetan nomads used yak butter as a -----, one that often took the place of money in commercial transactions.
 (A) promotion (B) commodity (C) formula
 (D) refund (E) register
- Geysers vary widely: some may discharge -----, whereas others may have only a brief explosive eruption and then remain ----- for hours or days.
 (A) violently . . dangerous
 (B) continuously . . quiescent
 (C) spontaneously . . unpredictable
 (D) regularly . . active
 (E) faintly . . imperceptible
- Although the administration repeatedly threatened to use its authority in order to ----- the student protestors into submission, they refused to be intimidated.
 (A) ease (B) delude (C) cajole
 (D) bully (E) nudge
- Only after the campaign volunteers became aware of their candidate's questionable motives could they recognize the ----- statements made in his seemingly ----- speeches.
 (A) insightful . . astute
 (B) partisan . . callous
 (C) cordial . . hostile
 (D) duplicitous . . candid
 (E) cunning . . surreptitious
- No longer narrowly preoccupied with their own national pasts, historians are increasingly ----- in that they often take a transnational perspective.
 (A) conciliatory (B) bombastic (C) mendacious
 (D) cosmopolitan (E) jocular

GO ON TO THE NEXT PAGE



The passage below is followed by questions based on its content. Answer the questions on the basis of what is stated or implied in the passage and in any introductory material that may be provided.

Questions 7-19 are based on the following passage.

In the introduction to one of her dramas, a well-known playwright and actor discusses some of her ideas about acting.

Words have always held a particular power for me. I remember leafing through a book of Native American poems one morning while I was waiting for my Shakespeare class to begin and being struck by a phrase from the preface,
 5 “The word, the word above all, is truly magical, not only by its meaning, but by its artful manipulation.”

This quote, which I added to my journal, reminded me of something my grandfather had told me when I was a girl: “If you say a word often enough it becomes your
 10 own.” I added that phrase to my journal next to the quote about the magic of words. When I traveled home to Baltimore for my grandfather’s funeral a year after my journal entry, I mentioned my grandfather’s words to my father. He corrected me. He told me that my grandfather
 15 had actually said, “If you say a word often enough, it *becomes* you.” I was still a student at the time, but I knew even then, even before I had made a conscious decision to teach as well as act, that my grandfather’s words would be important.

Actors are very impressionable people, or some would say, suggestible people. We are trained to develop aspects of our memories that are more emotional and sensory than intellectual. The general public often wonders how actors remember their lines. What’s more remarkable to me is
 20 how actors remember, recall, and reiterate feelings and sensations. The body has a memory just as the mind does. The heart has a memory, just as the mind does. The act of speech is a physical act. It is powerful enough that it can create, with the rest of the body, a kind of cooperative
 25 dance. That dance is a sketch of something that is inside a person, and not fully revealed by the words alone. I came to realize that if I were able to record part of the dance—that is, the spoken part—and reenact it, the rest of the body would follow. I could then create the illusion of being
 30 another person by reenacting something she had said *as she had said it*. My grandfather’s idea led me to consider that the reenactment, or the reiteration, of a person’s words would also teach me about that person.

I had been trained in the tradition of acting called
 40 “psychological realism.” A basic tenet of psychological realism is that characters live inside of you and that you create a lifelike portrayal of the character through a process of realizing your own similarity to the character. When I

later became a teacher of acting, I began to become more
 45 and more troubled by the self-oriented method. I began to look for ways to engage my students in putting themselves in other people’s shoes. This went against the grain of the psychological realism tradition, which was to get the character to walk in the *actor’s shoes*. It became less and less
 50 interesting intellectually to bring the dramatic literature of the world into a classroom of people in their late teens and twenties, and to explore it within the framework of their real lives. Aesthetically it seemed limited, because most of the time the characters all sounded the same. Most characters spoke somewhere inside the rhythmic range of the
 55 students. More troubling was that this method left an important bridge out of acting. The spirit of acting is the *travel* from the self to the other. This “self-based” method seemed to come to a spiritual halt. It saw the self as the ultimate home of the character. To me, the search for character is constantly in motion. It is a quest that moves back
 60 and forth between the self and the other.

I needed evidence that you could find a character’s psychological reality by “inhabiting” that character’s words. I
 65 needed evidence of the limitations of basing a character on a series of metaphors from an actor’s real life. I wanted to develop an alternative to the self-based technique, a technique that would begin with the other and come to the self, a technique that would empower the other to find the actor
 70 rather than the other way around.

7. The primary purpose of the first three paragraphs (lines 1-38) is to

- (A) describe the actor’s process of developing a role
- (B) trace the beginnings of a personal philosophy
- (C) analyze the grandfather’s insights into acting
- (D) investigate the effect of words on interpersonal relationships
- (E) explore a viewpoint that the author is forced to reverse

8. The author of the passage uses the quotation in lines 5-6 primarily as a

- (A) vivid expression of how she views words
- (B) powerful example of what she sought in Shakespeare
- (C) scholarly citation linking her to poetic words
- (D) comical introduction to a problem encountered by every dramatic performer
- (E) pragmatic assessment of the power of words for beginning drama students

GO ON TO THE NEXT PAGE



9. By presenting both versions of the grandfather's words (lines 9-10 and lines 15-16), the author primarily conveys the
- (A) grandfather's attempts to play with language
 - (B) grandfather's enthusiasm in spite of her reaction
 - (C) father's intervention in a private moment
 - (D) ambivalence she feels toward her grandfather
 - (E) significance of the grandfather's message
10. The comparisons in lines 26-27 serve primarily to
- (A) show the similarities that exist between dancing and acting
 - (B) celebrate the broad range of memories that actors learn to draw on
 - (C) justify the author's adherence to conventional acting theory
 - (D) explain why actors have difficulty interpreting character
 - (E) enhance the author's credibility as a technically trained actor
11. In lines 29-34 ("a kind . . . follow"), the author uses the idea of a dance to
- (A) supply an image for the awkwardness some actors experience
 - (B) illustrate a process that words can set in motion
 - (C) portray the enactment of a character as an exhilarating experience
 - (D) argue that acting requires physical agility
 - (E) show how a word can evoke multiple meanings
12. In line 34, "follow" most nearly means
- (A) pursue
 - (B) result
 - (C) surpass
 - (D) join in
 - (E) listen carefully
13. In lines 39-62, the author reveals herself to be someone who believes that
- (A) teachers and students should examine controversial issues together
 - (B) playwrights especially benefit from experience on stage
 - (C) conventional approaches should be open to questioning and reevaluation
 - (D) traditional methods often reflect the accumulated insight of generations
 - (E) standard practices are the most suitable to teach to beginners
14. Lines 39-70 present the author's argument primarily by
- (A) celebrating the appeal of a discredited tradition
 - (B) exploring the impact of her early experiences on her acting
 - (C) explaining her reasons for rejecting a technique
 - (D) describing challenges commonly met by professional actors
 - (E) analyzing insights gained from debates with other drama professors
15. The author's explanation in the fourth paragraph suggests that the "self-oriented method" (line 45) rests on the assumption that
- (A) audience members appreciate complex nuances of character
 - (B) the playwright's biography provides the main evidence for interpreting character
 - (C) actors have already felt the full range of human emotions
 - (D) actors are extremely independent and self-serving people
 - (E) actors' lives become fulfilled through their dramatic portrayals



16. Which statement best captures the author’s point in lines 54-56 (“Most characters . . . students”)?
- (A) The characters spoke through the students’ own rich cadences.
 - (B) Young drama students have an uncanny knack for conveying character.
 - (C) Most students found class to be repetitious.
 - (D) Characterizations were confined by what the students knew.
 - (E) The spontaneity that the students had hoped for had not been achieved.
17. In line 60, the phrase “home of the character” most nearly means
- (A) way of understanding eccentricities
 - (B) social context surrounding a character
 - (C) environment for practicing acting
 - (D) forum in which the self is presented publicly
 - (E) source of a role’s psychological truth
18. In lines 63-64, “psychological reality” describes which quality?
- (A) The versatility of a performer
 - (B) The physical gestures of a character
 - (C) The essence of an identity
 - (D) The accuracy of an audience’s expectations
 - (E) The logical consistency of certain actions
19. The “metaphors” in line 66 are best described as
- (A) private misgivings
 - (B) objective observations
 - (C) abstract equations
 - (D) memorable phrases
 - (E) personal comparisons

S T O P

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.**


SECTION 10

Time — 10 minutes

14 Questions

Turn to Section 10 (page 7) of your answer sheet to answer the questions in this section.

Directions: For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

The following sentences test correctness and effectiveness of expression. Part of each sentence or the entire sentence is underlined; beneath each sentence are five ways of phrasing the underlined material. Choice A repeats the original phrasing; the other four choices are different. If you think the original phrasing produces a better sentence than any of the alternatives, select choice A; if not, select one of the other choices.

In making your selection, follow the requirements of standard written English; that is, pay attention to grammar, choice of words, sentence construction, and punctuation. Your selection should result in the most effective sentence—clear and precise, without awkwardness or ambiguity.

EXAMPLE:

Laura Ingalls Wilder published her first book and she was sixty-five years old then.

- (A) and she was sixty-five years old then
- (B) when she was sixty-five
- (C) at age sixty-five years old
- (D) upon the reaching of sixty-five years
- (E) at the time when she was sixty-five

A B C D E

1. In everything from finding comets to spotting supernovae, amateur astronomers have become so accomplished, and professional astronomers sometimes seek their help.
 - (A) accomplished, and
 - (B) accomplished, also
 - (C) accomplished that
 - (D) accomplished therefore
 - (E) accomplished when
2. Since scientific advances are central to progress, basic research deserving continuing support.
 - (A) basic research deserving continuing support
 - (B) basic research being what deserves continuing support
 - (C) basic research deserves continuing support
 - (D) continuing support is deserved by basic research
 - (E) continuing support is what they deserve in basic research
3. With Americans consuming sugar in record amounts, nutritionists are urging the public to reduce its consumption of sodas, which have largely replaced other, more healthful, beverages.
 - (A) nutritionists are urging the public to reduce its consumption of sodas, which
 - (B) nutritionists have been urging that the public reduces its consumption of sodas; those
 - (C) the public ought to reduce its consuming of sodas, as urged by nutritionists, because they
 - (D) nutritionists urge about reducing public soda consumption, which
 - (E) less soda should be consumed by the public, urge nutritionists, which
4. Experts disagree about what is the definition of intelligence and how to measure it.
 - (A) what is the definition of intelligence and how to measure it
 - (B) how to define intelligence, and also its measurement
 - (C) how to define and measure intelligence
 - (D) defining intelligence as well as measurement
 - (E) the definition of intelligence and measuring it

GO ON TO THE NEXT PAGE



5. The charges against the organization are being investigated by a committee, it includes several senators.
- (A) committee, it includes
(B) committee; it including
(C) committee, and it will include
(D) committee, they include
(E) committee that includes
6. Travel writing often describes a journey of exploration and endurance, a trip that is risky either because of natural hazards but also because of political unrest.
- (A) but also because of
(B) but also due to
(C) or because there was
(D) or because of
(E) or the cause is
7. Though they had earlier indicated otherwise, it was eventually decided upon by the legislators to have the bill passed.
- (A) it was eventually decided upon by the legislators to have the bill passed
(B) it was eventually decided upon by the legislators to pass the bill
(C) the eventual decision of the legislators was for passage of the bill
(D) the legislators' eventual decision was passing the bill
(E) the legislators eventually decided to pass the bill
8. Spread by rat fleas, millions of people in medieval Europe were killed by bubonic plague.
- (A) millions of people in medieval Europe were killed by bubonic plague
(B) and millions of medieval Europeans killed by bubonic plague
(C) this led to the killing of millions of medieval Europeans by bubonic plague
(D) bubonic plague in medieval Europe was why millions of people were killed
(E) bubonic plague killed millions of people in medieval Europe
9. Traditional Jamaican music, enriched with rock, jazz, and other modern rhythms from America, were the basis for reggae.
- (A) were the basis for
(B) have been a basis for
(C) become the basis of
(D) was the basis for
(E) being the basis of
10. James Barrie, the author of *Peter Pan* and other plays, is noted for portraying adulthood as unpleasant and childhood is glorified.
- (A) childhood is glorified
(B) childhood as being glorious
(C) childhood as glorious
(D) childhood glorified
(E) glorified childhood
11. Medical insurance coverage that requires high monthly premiums and that is beyond the financial means of many people.
- (A) that requires high monthly premiums and that is
(B) that requires high monthly premiums and it is
(C) requiring high monthly premiums are
(D) with the requirements of high monthly premiums are
(E) that requires high monthly premiums is
12. Among the most flavorful cuisines in the United States, New Orleans has also become one of the most popular.
- (A) New Orleans has also become
(B) New Orleans has also become famous as
(C) the cuisine of New Orleans is also
(D) cuisines in New Orleans also have become
(E) also the cuisine of New Orleans is



13. Meals prepared by the Algonquin Indians, who were farmers as well as hunters, included more maize and pumpkin than other Indian tribes.
- (A) pumpkin than other Indian tribes
 - (B) pumpkin than did those prepared by other Indian tribes
 - (C) pumpkin than that which other Indian tribes did
 - (D) pumpkin, and this was not the same as other Indian tribes
 - (E) pumpkin; and other Indian tribes did not prepare meals in this way
14. Born of Ibuza parents in Nigeria, novelist Buchi Emecheta moved to England in 1962, since which she has lived in North London.
- (A) 1962, since which she has lived in North London
 - (B) 1962 and has lived since then in North London
 - (C) 1962, since then she has lived in North London
 - (D) 1962 and lived since then in North London
 - (E) 1962, and living in North London since that time

S T O P

**If you finish before time is called, you may check your work on this section only.
Do not turn to any other section in the test.**