



Find the coordinates of the vertices and the foci for the following ellipses.

1. $\frac{x^2}{9} + \frac{y^2}{25} = 1$

2. $\frac{x^2}{64} + \frac{y^2}{100} = 1$

3. $4x^2 + y^2 = 16$

4. $4x^2 + 25y^2 = 25$

Write an equation for an ellipse that satisfies each set of conditions.

5. Center at (0, 0), vertex at (4, 0), co-vertex at (0, -2)
6. Center at (0, 0), vertex at (-5, 0), co-vertex at (0, 3)
7. Center at (0, 0), vertex at (0, 6), co-vertex at (-4, 0)
8. Center at (0, 0), vertex at (0, -8), co-vertex at (-5, 0)
9. Center at (0, 0), focus at (2, 0), co-vertex at (0, -3)
10. Center at (0, 0), focus at (0, -4), co-vertex at (-1, 0)
11. Center at (0, 0), focus at (2, 0), vertex at (-3, 0)
12. Center at (0, 0), focus at (0, 8), vertex at (0, 10)

Find the coordinates of the foci and the lengths of major and minor axes for the ellipse with the given equation. Then Graph the ellipse.

13. $\frac{x^2}{36} + \frac{y^2}{100} = 1$

14. $\frac{x^2}{25} + \frac{y^2}{16} = 1$

15. $25x^2 + 36y^2 = 900$

16. $16y^2 + 9x^2 = 144$