

Writing Equations of Ellipses

Use the information provided to write the standard form equation of each ellipse.

- 1) Vertices: $(10, 0)$, $(-10, 0)$
Co-vertices: $(0, 9)$, $(0, -9)$
- 2) Vertices: $(0, 6)$, $(0, -6)$
Co-vertices: $(5, 0)$, $(-5, 0)$
- 3) Vertices: $(12, 0)$, $(-12, 0)$
Foci: $(2\sqrt{11}, 0)$, $(-2\sqrt{11}, 0)$
- 4) Vertices: $(14, 0)$, $(-14, 0)$
Foci: $(3\sqrt{19}, 0)$, $(-3\sqrt{19}, 0)$
- 5) Foci: $(-7, 5 + \sqrt{13})$, $(-7, 5 - \sqrt{13})$
Co-vertices: $(-1, 5)$, $(-13, 5)$
- 6) Foci: $(7, 9)$, $(-1, 9)$
Co-vertices: $(3, 12)$, $(3, 6)$
- 7) Foci: $(\sqrt{17}, 0)$, $(-\sqrt{17}, 0)$
Endpoints of major axis: $(9, 0)$, $(-9, 0)$
- 8) Foci: $(\sqrt{115}, 0)$, $(-\sqrt{115}, 0)$
Endpoints of major axis: $(\sqrt{195}, 0)$, $(-\sqrt{195}, 0)$
- 9) Foci: $(7 + 2\sqrt{35}, -4)$, $(7 - 2\sqrt{35}, -4)$
Endpoints of minor axis: $(7, -2)$, $(7, -6)$
- 10) Foci: $(-5, 7 + \sqrt{115})$, $(-5, 7 - \sqrt{115})$
Endpoints of minor axis: $(4, 7)$, $(-14, 7)$
- 11) Center: $(6, -5)$
Vertex: $(6, 7)$
Focus: $(6, -5 - 6\sqrt{3})$
- 12) Center: $(-3, -4)$
Vertex: $(6, -4)$
Focus: $(-3 - \sqrt{65}, -4)$
- 13) Center: $(4, 8)$
Vertex: $(4, 8 - \sqrt{170})$
Co-vertex: $(4 - \sqrt{15}, 8)$
- 14) Center: $(7, -10)$
Vertex: $(-6, -10)$
Co-vertex: $(7, -17)$

15) Center: $(-3, 3)$
 Vertex: $(-10, 3)$
 $c^2 = 33$

16) Center: $(1, -7)$
 Vertex: $(1, 1)$
 $c^2 = 55$

17) Center: $(-9, 5)$
 Focus: $(-9 + 2\sqrt{14}, 5)$
 Co-vertex: $(-9, 10)$

18) Center: $(6, -4)$
 Focus: $(6 + 2\sqrt{6}, -4)$
 Co-vertex: $(6, 1)$

19) Center: $(4, 0)$
 Focus: $(4, 3\sqrt{7})$
 Width: 18

20) Center: $(4, -8)$
 Height: 18
 Width: 14

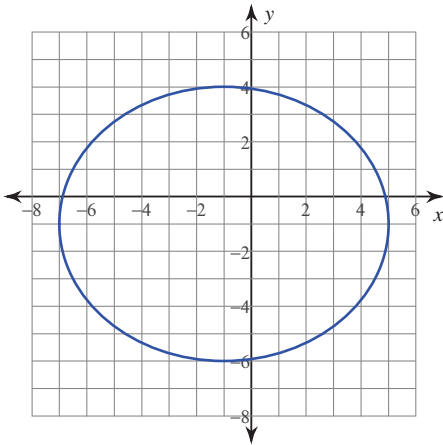
21) Center: $(9, -7)$
 $a = 9$
 $b = 4$
 Width: 8

22) Center at origin
 Focus: $(3\sqrt{15}, 0)$
 y-intercept: $(0, 3)$

23) Endpoints of major axis: $(4, 18), (4, -4)$
 Endpoints of minor axis: $(12, 7), (-4, 7)$

24) Major axis is vertical
 Center: $(8, -2)$
 Major axis is 18 units long
 Minor axis is 8 units long

25)



26) Eccentricity = $\frac{\sqrt{91}}{10}$
 Co-vertices: $(12, 1), (6, 1)$