

Ellipses

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

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|---|--|
| 1) Foci: $(2\sqrt{3}, 0), (-2\sqrt{3}, 0)$
Co-vertices: $(0, 2), (0, -2)$ | 2) Vertices: $(0, 6), (0, -6)$
Co-vertices: $(3, 0), (-3, 0)$ |
| 3) Vertices: $(4, 3), (4, -7)$
Co-vertices: $(1, -2), (7, -2)$ | 4) Foci: $(\sqrt{17}, 0), (-\sqrt{17}, 0)$
Co-vertices: $(9, 0), (-9, 0)$ |
| 5) Foci: $(-7, 5 + \sqrt{13}), (-7, 5 - \sqrt{13})$
Co-vertices: $(-1, 5), (-13, 5)$ | 6) Vertices: $(5, 1), (-1, 1)$
Co-vertices: $(2, 3), (2, -1)$ |
| 7) Vertices: $(12, 0), (-12, 0)$
Co-vertices: $(2\sqrt{11}, 0), (-2\sqrt{11}, 0)$ | $2\sqrt{35}, -4)$
Co-vertices: $(7, -2), (7, -6)$ |
| 8) Vertices: $(7 + 2\sqrt{35}, -4), (7 -$ | 10) Center: $(7, -10)$
Vertex: $(-6, -10)$
Co-vertex: $(7, -17)$ |
| 9) Center: $(4, 8)$
Vertex: $(4, 8 - \sqrt{170})$
Co-vertex: $(4 - \sqrt{15}, 8)$ | |

 **Identify the vertices, co-vertices, foci.**

11) $\frac{x^2}{169} + \frac{y^2}{64} = 1$

15) $\frac{(x+5)^2}{81} + \frac{(y-1)^2}{144} = 1$

12) $\frac{x^2}{95} + \frac{y^2}{30} = 1$

16) $\frac{(x-3)^2}{49} + \frac{(y-9)^2}{4} = 1$

13) $\frac{x^2}{36} + \frac{y^2}{16} = 1$

17) $\frac{x^2}{64} + \frac{(y-8)^2}{9} = 1$

14) $\frac{x^2}{49} + \frac{y^2}{169} = 1$

18) $\frac{x^2}{64} + \frac{(y-6)^2}{121} = 1$

Answers

Ellipses

1) $\frac{x^2}{16} + \frac{y^2}{4} = 1$

2) $\frac{x^2}{9} + \frac{y^2}{36} = 1$

3) $\frac{(x-4)^2}{9} + \frac{(y+2)^2}{25} = 1$

4) $\frac{x^2}{81} + \frac{y^2}{64} = 1$

5) $\frac{(x+7)^2}{36} + \frac{(y-5)^2}{49} = 1$

6) $\frac{(x-2)^2}{9} + \frac{(y-1)^2}{4} = 1$

7) $\frac{x^2}{144} + \frac{y^2}{100} = 1$

8) $\frac{(x-7)^2}{144} + \frac{(y+5)^2}{4} = 1$

9) $\frac{(x-4)^2}{15} + \frac{(y-8)^2}{170} = 1$

10) $\frac{(x-7)^2}{169} + \frac{(y+10)^2}{49} = 1$

11) Vertices: (13, 0), (-13, 0)

Co-vertices: (0, 8), (0, -8)

 Foci: ($\sqrt{105}$, 0), ($-\sqrt{105}$, 0)

 12) Vertices: ($\sqrt{95}$, 0), ($-\sqrt{95}$, 0)

 Co-vertices: (0, $\sqrt{30}$), (0, $-\sqrt{30}$)

 Foci: ($\sqrt{65}$, 0), ($-\sqrt{65}$, 0)

13) Vertices: (6, 0), (-6, 0)

Co-vertices: (0, 4), (0, -4)

 Foci: ($2\sqrt{5}$, 0), ($-2\sqrt{5}$, 0)

14) Vertices: (0, 13), (0, -13)

Co-vertices: (7, 0), (-7, 0)

 Foci: (0, $2\sqrt{30}$), (0, $-2\sqrt{30}$)

15) Vertices: (-5, 13), (-5, -11)

Co-vertices: (4, 1), (-14, 1)

 Foci: (-5, $1 + 3\sqrt{7}$), (-5, $1 - 3\sqrt{7}$)

16) Vertices: (10, 9), (-4, 9)

Co-vertices: (3, 11), (3, 7)

 Foci: ($3 + 3\sqrt{5}$, 9), ($3 - 3\sqrt{5}$, 9)

17) Vertices: (8, 8), (-8, 8)

Co-vertices: (0, 11), (0, 5)

 Foci: ($\sqrt{55}$, 8), ($-\sqrt{55}$, 8)

18) Vertices: (0, 17), (0, -5)

Co-vertices: (8, 6), (-8, 6)

 Foci: (0, $6 + \sqrt{57}$), (0, $6 - \sqrt{57}$)