

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

1) $10x^2 + 13y^2 + 40x - 130y - 285 = 0$

3) Vertices: $(-9, 13), (-9, -3)$
Co-vertices: $(-4, 5), (-14, 5)$

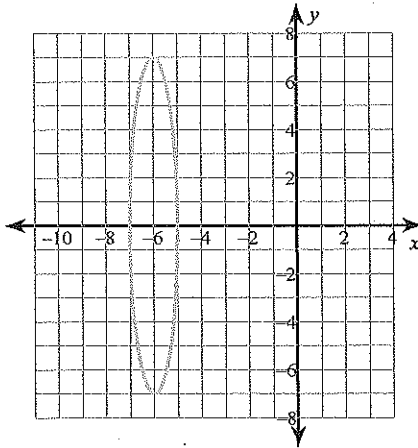
5) Vertices: $(-1, 17), (-1, -1)$
Foci: $(-1, 8 + 3\sqrt{5}), (-1, 8 - 3\sqrt{5})$

7) Foci: $\left(\frac{8\sqrt{6} - 15}{2}, -\frac{15}{2}\right), \left(\frac{-8\sqrt{6} - 15}{2}, -\frac{15}{2}\right)$
Endpoints of major axis: $\left(\frac{7}{2}, -\frac{15}{2}\right), \left(-\frac{37}{2}, -\frac{15}{2}\right)$

9) Center: $(-4, 7)$
Vertex: $(-4, 18)$
Focus: $(-4, 7 - \sqrt{21})$

11) Endpoints of major axis: $(5, 9), (-23, 9)$
Endpoints of minor axis: $(-9, 17), (-9, 1)$

13)



2) $9x^2 + 16y^2 + 90x - 224y - 287 = 0$

4) Vertices: $(5, 12), (5, -10)$
Co-vertices: $(8, 1), (2, 1)$

6) Vertices: $(4, -3), (-10, -3)$
Foci: $(-3 + 2\sqrt{10}, -3), (-3 - 2\sqrt{10}, -3)$

8) Foci: $(-3, -7 + \sqrt{133}), (-3, -7 - \sqrt{133})$
Endpoints of major axis: $(-3, 6), (-3, -20)$

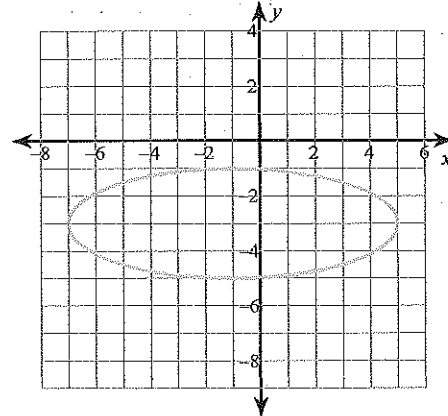
10) Center: $\left(4, -\frac{11}{2}\right)$

Vertex: $\left(4, \frac{19}{2}\right)$

Focus: $\left(4, \frac{7}{2}\right)$

12) Endpoints of major axis: $(-6, 7), (-6, -9)$
Endpoints of minor axis: $(-1, -1), (-11, -1)$

14)



Answers to Ellipse (ID: 1)

$$1) \frac{(x+2)^2}{65} + \frac{(y-5)^2}{50} = 1$$

$$2) \frac{(x+5)^2}{144} + \frac{(y-7)^2}{81} = 1$$

$$3) \frac{(x+9)^2}{25} + \frac{(y-5)^2}{64} = 1$$

$$4) \frac{(x-5)^2}{9} + \frac{(y-1)^2}{121} = 1$$

$$5) \frac{(x+1)^2}{36} + \frac{(y-8)^2}{81} = 1$$

$$6) \frac{(x+3)^2}{49} + \frac{(y+3)^2}{9} = 1$$

$$7) \frac{\left(x + \frac{15}{2}\right)^2}{121} + \frac{\left(y + \frac{15}{2}\right)^2}{25} = 1$$

$$8) \frac{(x+3)^2}{36} + \frac{(y+7)^2}{169} = 1$$

$$9) \frac{(x+4)^2}{100} + \frac{(y-7)^2}{121} = 1$$

$$10) \frac{(x-4)^2}{144} + \frac{\left(y + \frac{11}{2}\right)^2}{225} = 1$$

$$11) \frac{(x+9)^2}{196} + \frac{(y-9)^2}{64} = 1$$

$$12) \frac{(x+6)^2}{25} + \frac{(y+1)^2}{64} = 1$$

$$13) (x+6)^2 + \frac{y^2}{49} = 1$$

$$14) \frac{(x+1)^2}{36} + \frac{(y+3)^2}{4} = 1$$