

Day 1 - Circles/Ellipses Worksheet

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

1) Center: $(10, -5)$
Radius: 5

2) Center: $(11, 7)$
Radius: $\sqrt{38}$

3) Center: $(10, 0)$
Radius: 8

4) Center: $(-7, 3)$
Radius: $6\sqrt{2}$

5) Center: $(14, -12)$
Point on Circle: $(18, -14)$

6) Center: $(-14, 1)$
Point on Circle: $(-13, 1)$

7) Ends of a diameter: $(4, 8)$ and $(-8, 14)$

8) Ends of a diameter: $(9, 18)$ and $(11, 0)$

Identify the CENTER, VERTICES, CO-VERTICES, FOCI, LENGTH OF MAJOR AND MINOR AXIS and the ECCENTRICITY of each.

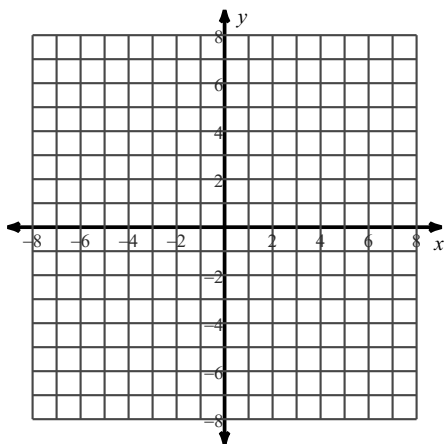
9) $\frac{(x-2)^2}{49} + \frac{(y+10)^2}{64} = 1$

10) $\frac{(x-2)^2}{81} + \frac{(y-7)^2}{49} = 1$

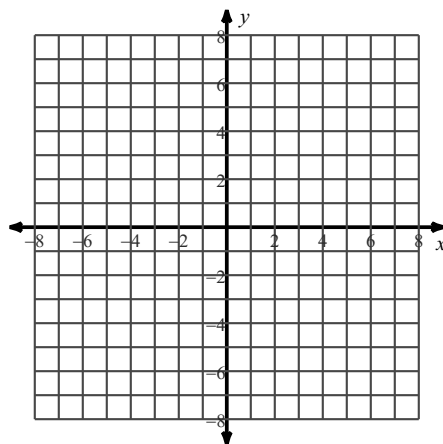
$$11) \frac{\left(x + \frac{17}{2}\right)^2}{144} + \frac{(y + 10)^2}{81} = 1$$

Plot the CENTER and RADIUS of each. Then sketch the graph.

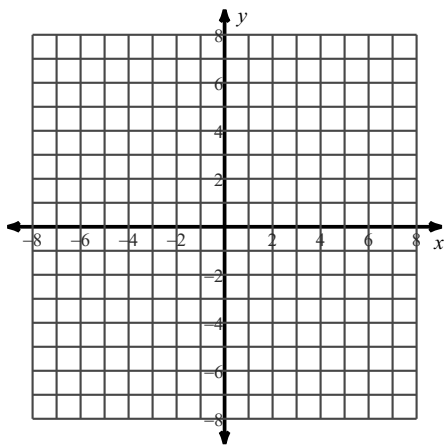
$$12) (x - 4)^2 + (y - 1)^2 = 5$$



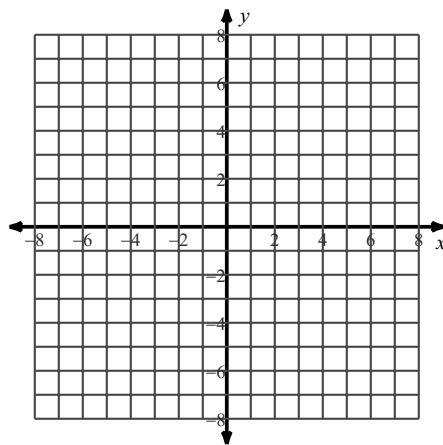
$$13) x^2 + (y - 3)^2 = 9$$



$$14) x^2 + y^2 = 30$$

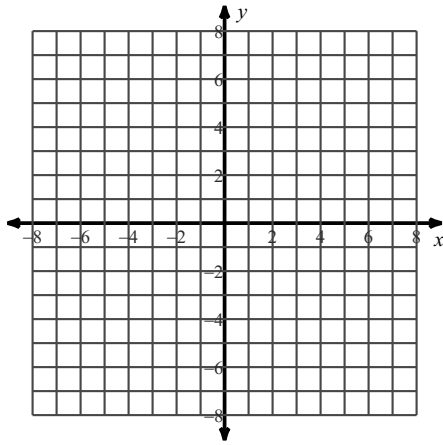


$$15) x^2 + (y + 2)^2 = 4$$

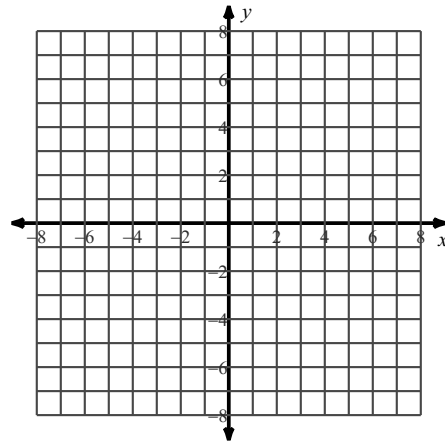


Sketch the graph. Plot the CENTER, FOCI, VERTICES and CO-VERTICES.

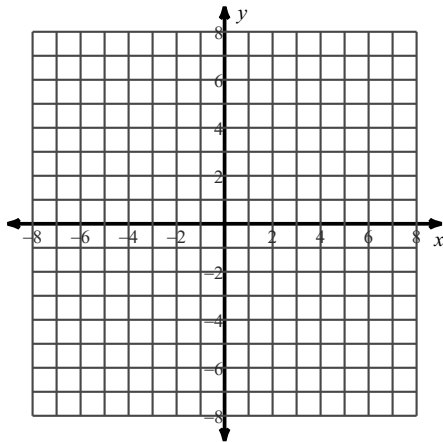
16) $\frac{(x-2)^2}{4} + \frac{y^2}{49} = 1$



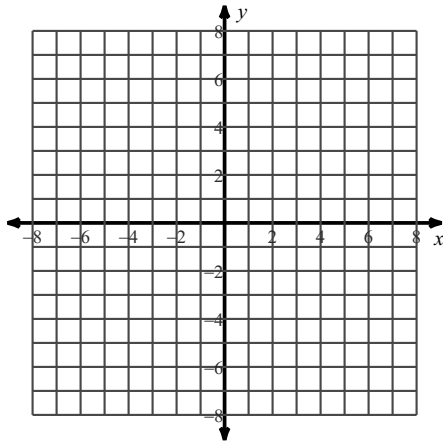
17) $\frac{(x-1)^2}{36} + \frac{(y+2)^2}{9} = 1$



18) $\frac{x^2}{30} + \frac{(y+2)^2}{10} = 1$



$$19) (x - 2)^2 + \frac{(y - 4)^2}{9} = 1$$



Answers to Day 1 - Circles/Ellipses Worksheet

1) $(x - 10)^2 + (y + 5)^2 = 25$

2) $(x - 11)^2 + (y - 7)^2 = 38$

3) $(x - 10)^2 + y^2 = 64$

4) $(x + 7)^2 + (y - 3)^2 = 72$

5) $(x - 14)^2 + (y + 12)^2 = 20$

6) $(x + 14)^2 + (y - 1)^2 = 1$

7) $(x + 2)^2 + (y - 11)^2 = 45$

8) $(x - 10)^2 + (y - 9)^2 = 82$

9) Center: $(2, -10)$

Vertices: $(2, -2), (2, -18)$

Co-vertices: $(9, -10), (-5, -10)$

Foci: $(2, -10 + \sqrt{15}), (2, -10 - \sqrt{15})$

Major Axis: 16 units

Minor Axis: 14 units

Eccentricity: $\frac{\sqrt{15}}{8} \approx 0.484$

10) Center: $(2, 7)$

Vertices: $(11, 7), (-7, 7)$

Co-vertices: $(2, 14), (2, 0)$

Foci: $(2 + 4\sqrt{2}, 7), (2 - 4\sqrt{2}, 7)$

Major Axis: 18 units

Minor Axis: 14 units

Eccentricity: $\frac{4\sqrt{2}}{9} \approx 0.629$

11) Center: $\left(-\frac{17}{2}, -10\right)$

Vertices: $\left(\frac{7}{2}, -10\right), \left(-\frac{41}{2}, -10\right)$

Co-vertices: $\left(-\frac{17}{2}, -1\right), \left(-\frac{17}{2}, -19\right)$

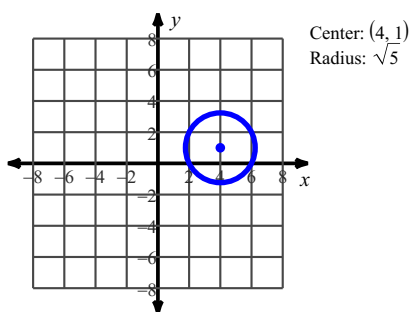
Foci: $\left(\frac{6\sqrt{7} - 17}{2}, -10\right), \left(\frac{-6\sqrt{7} - 17}{2}, -10\right)$

Major Axis: 24 units

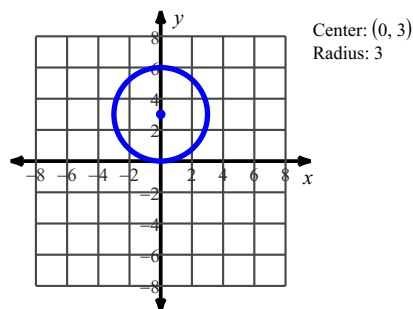
Minor Axis: 18 units

Eccentricity: $\frac{\sqrt{7}}{4} \approx 0.661$

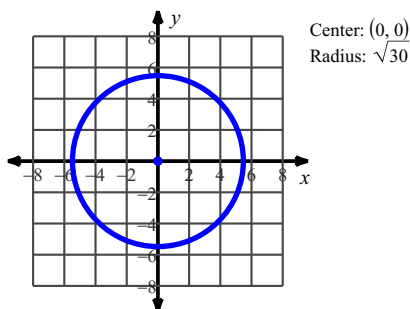
12)



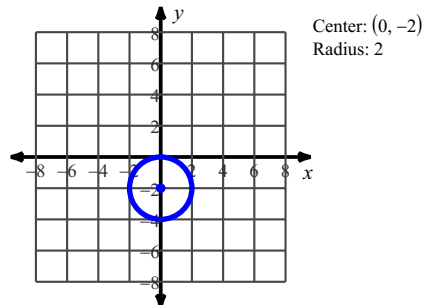
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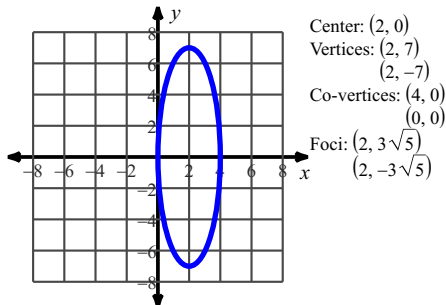
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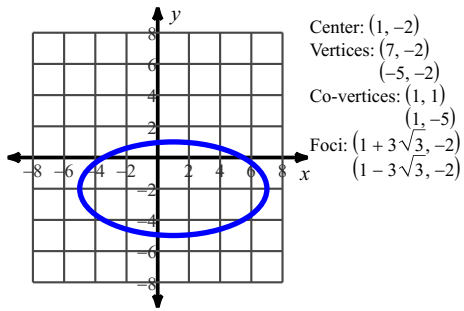
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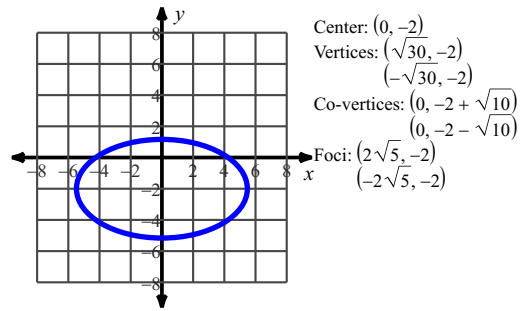
16)



17)



18)



19)

