NAME: _____ DATE: _____
TEACHER: _____

Algebra 2 Classifying Conic Sections Ellipses General Exercise

Classify each conic section.

1) $25x^2 - 50x + y^2 = 0$

2) $16x^2 + 32x + 25y^2 - 200y + 16 = 0$

3) $x^2 + 4x + 25y^2 + 200y + 379 = 0$

4) $36x^2 - 144x + 25y^2 + 100y - 656 = 0$

5) $4x^2 + 32x + 9y^2 - 72y + 172 = 0$

6) $4x^2 - 32x + 9y^2 + 90y + 145 = 0$

Classify each conic section and write its standard form equation.

7) $x^2 + 8x + 9y^2 + 18y + 16 = 0$

8) $36x^2 - 144x + y^2 + 108 = 0$

9) $x^2 + 2x + 9y^2 + 54y + 73 = 0$

10) $x^2 - 8x + 4y^2 - 16y + 16 = 0$

11) $25x^2 + 50x + 36y^2 + 216y - 551 = 0$

12) $x^2 + 16y^2 - 128y + 240 = 0$

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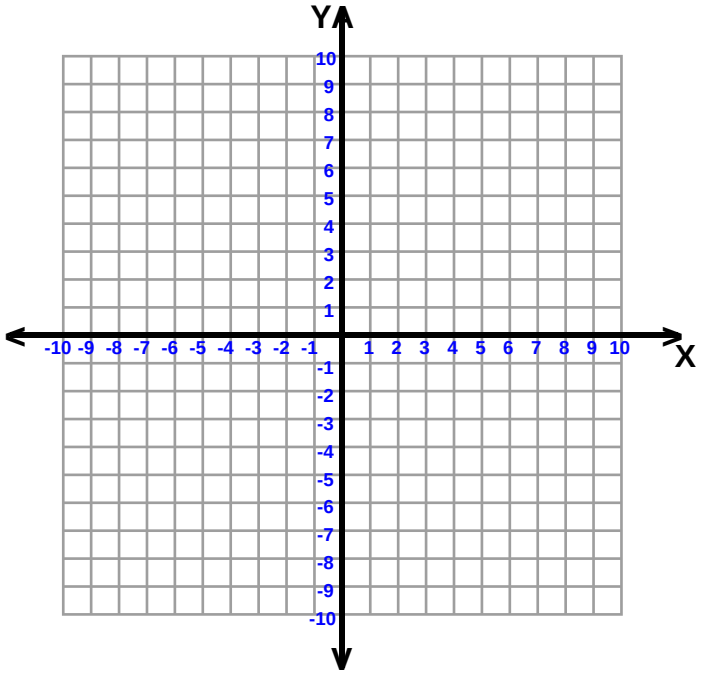
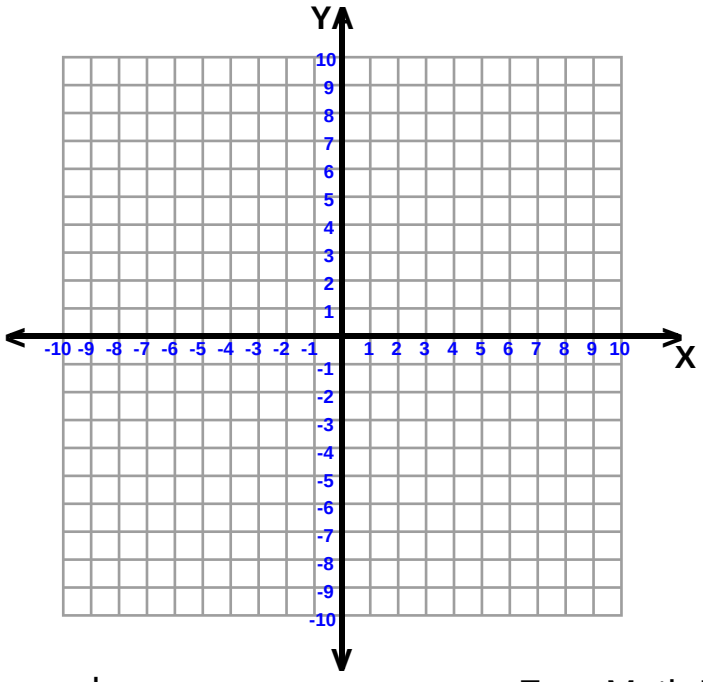
Algebra 2 Classifying Conic Sections Ellipses General Exercise

Classify each conic section, write its equation in standard form, and sketch the graph. For parabolas, identify the vertex and focus. For circles identify the radius and center. For ellipses and hyperbolas identify the center, vertices and foci.

1) $9x^2 - 36x + 4y^2 + 16y + 16 = 0$



2) $9x^2 + 36x + y^2 - 2y + 1 = 0$



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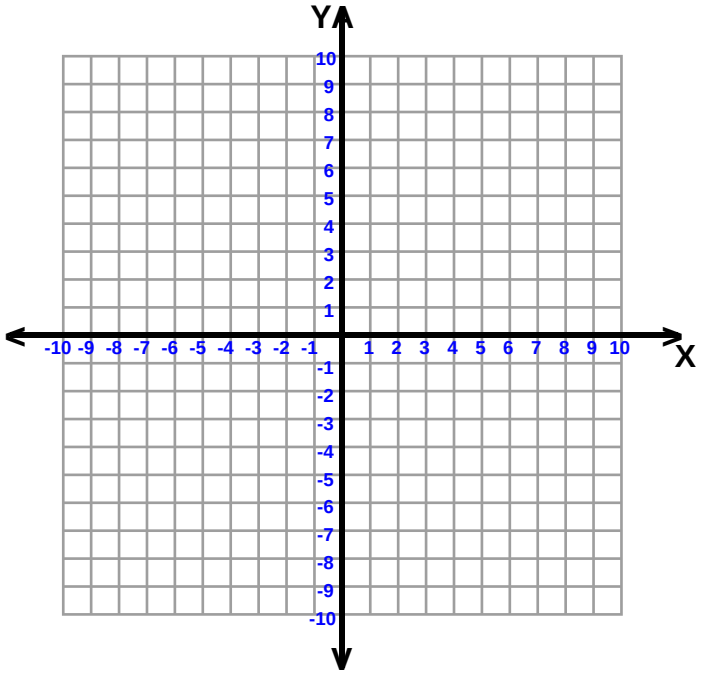
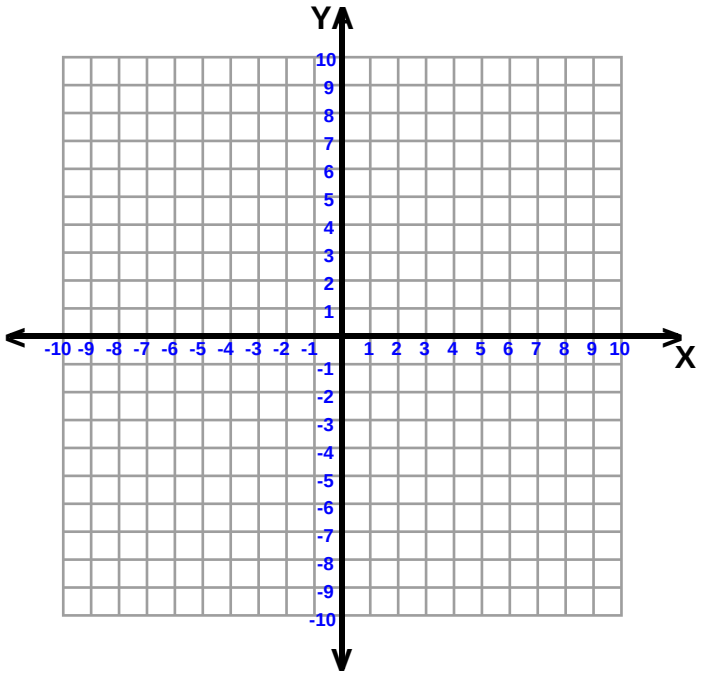
3) $9x^2 + 18x + 16y^2 - 135 = 0$



4) $4x^2 + 9y^2 - 18y - 135 = 0$



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Ellipse

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Ellipse

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Ellipse

Classify each conic section and write its standard form equation.

7) $x^2 + 8x + 9y^2 + 18y + 16 = 0$

Ellipse

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

8) $36x^2 - 144x + y^2 + 108 = 0$

Ellipse

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

9) $x^2 + 2x + 9y^2 + 54y + 73 = 0$

Ellipse

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

10) $x^2 - 8x + 4y^2 - 16y + 16 = 0$

Ellipse

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

11) $25x^2 + 50x + 36y^2 + 216y - 551 = 0$

Ellipse

$\frac{(x + 1)^2}{36} + \frac{(y + 3)^2}{25} = 1$

12) $x^2 + 16y^2 - 128y + 240 = 0$

Ellipse

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

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Algebra 2 Classifying Conic Sections Ellipses General Exercise

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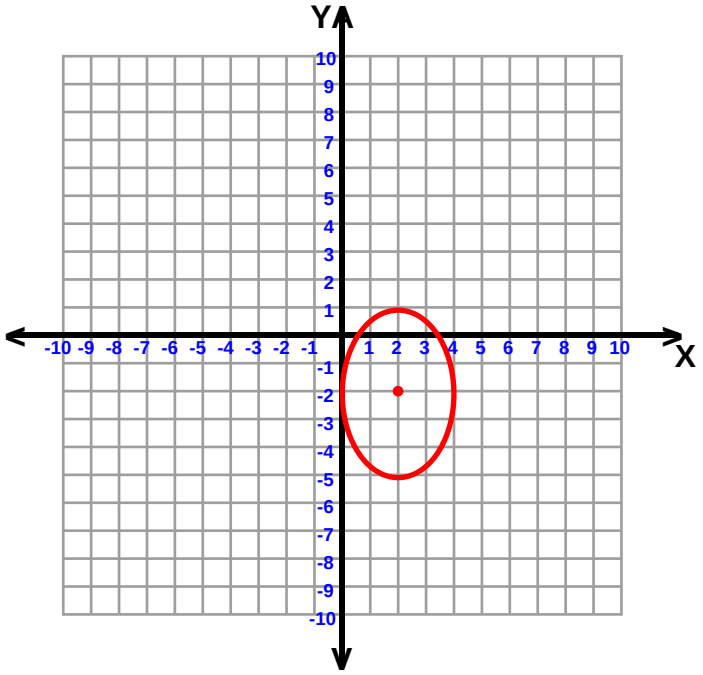


Ellipse

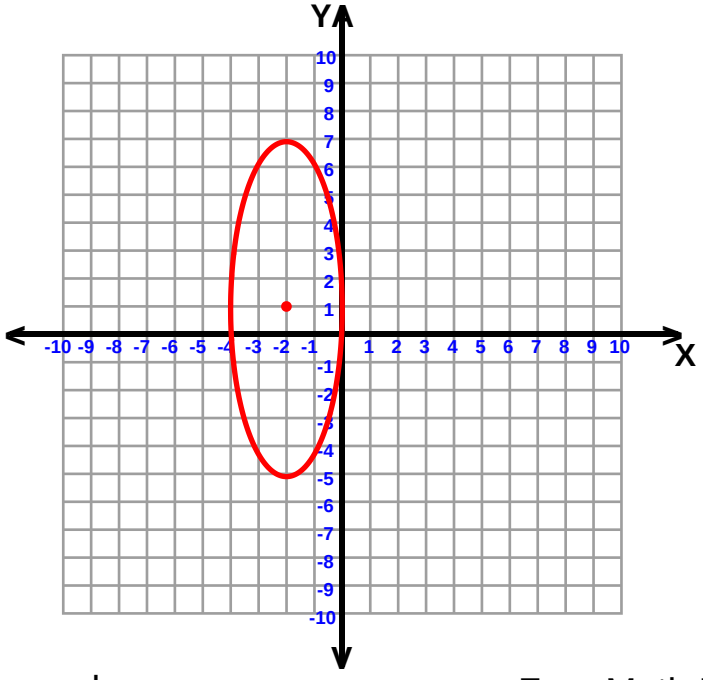
$$\frac{(x - 2)^2}{4} + \frac{(y + 2)^2}{9} = 1$$

Center = (2 , -2)

Vertices = (2 , 1) , (2 , -5)

Foci = $(2 , -2 + \sqrt{5}) , (2 , -2 - \sqrt{5})$

2) $9x^2 + 36x + y^2 - 2y + 1 = 0$



Ellipse

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

Center = (-2 , 1)

Vertices = (-2 , 7) , (-2 , -5)

Foci = $(-2 , 1 + 4\sqrt{2}) , (-2 , 1 - 4\sqrt{2})$

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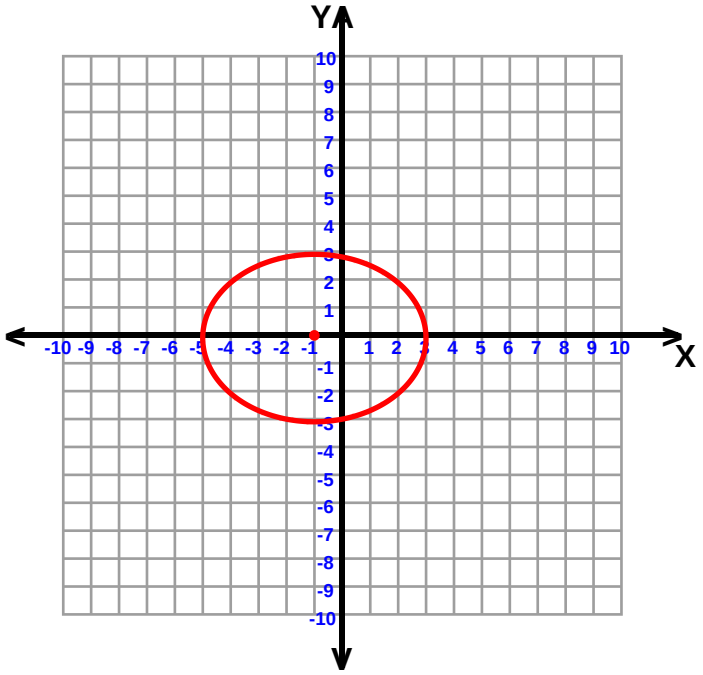
3) $9x^2 + 18x + 16y^2 - 135 = 0$



Ellipse

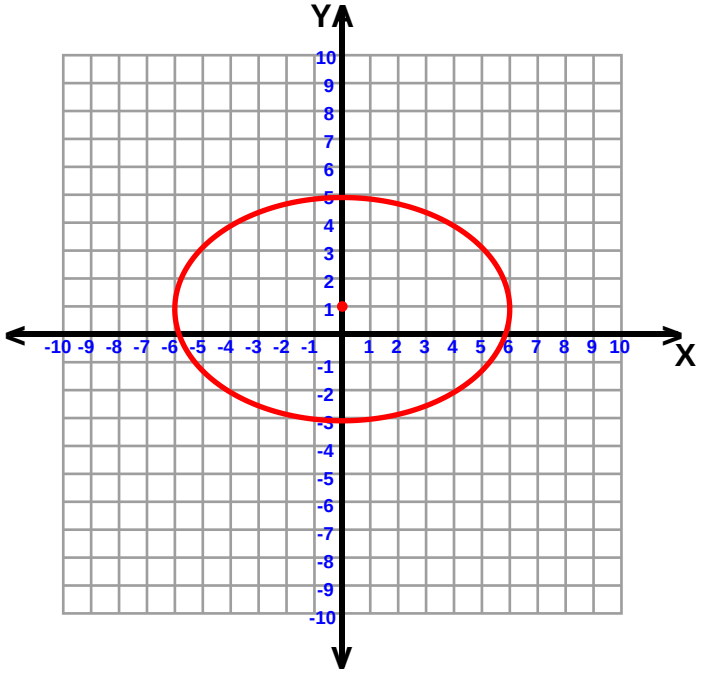
$\frac{(x + 1)^2}{16} + \frac{y^2}{9} = 1$

Center = (-1 , 0)

Vertices = (3 , 0) , (-5 , 0)

Foci = $(-1 + \sqrt{7}\ , 0)$, $(-1 - \sqrt{7}\ , 0)$

4) $4x^2 + 9y^2 - 18y - 135 = 0$



Ellipse

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

Center = (0 , 1)

Vertices = (6 , 1) , (-6 , 1)

Foci = $(2\sqrt{5}\ , 1)$, $(- 2\sqrt{5}\ , 1)$

