Name : _____ Score : _____

Teacher : _____ Date : _____

Classifying Conic Sections

Classify each conic section.

1) $y = 5(x - 3)^2 - 4$

2) $(x - 5)^2 + (y - 4)^2 = 36$

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

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

5) $\frac{(x - 2)^2}{25} + \frac{(y - 4)^2}{36} = 1$

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

Classify each conic section and write its standard form equation.

7) $x^2 + y^2 - 2x + 6y + 1 = 0$

8) $y = 5x^2 - 50x + 122$

9) $y = 2x^2 - 12x + 23$

10) $x^2 + y^2 + 10x - 4y + 25 = 0$

11) $36x^2 - 360x + 25y^2 - 100y + 100 = 0$

12) $9x^2 - 90x + 16y^2 + 160y + 481 = 0$

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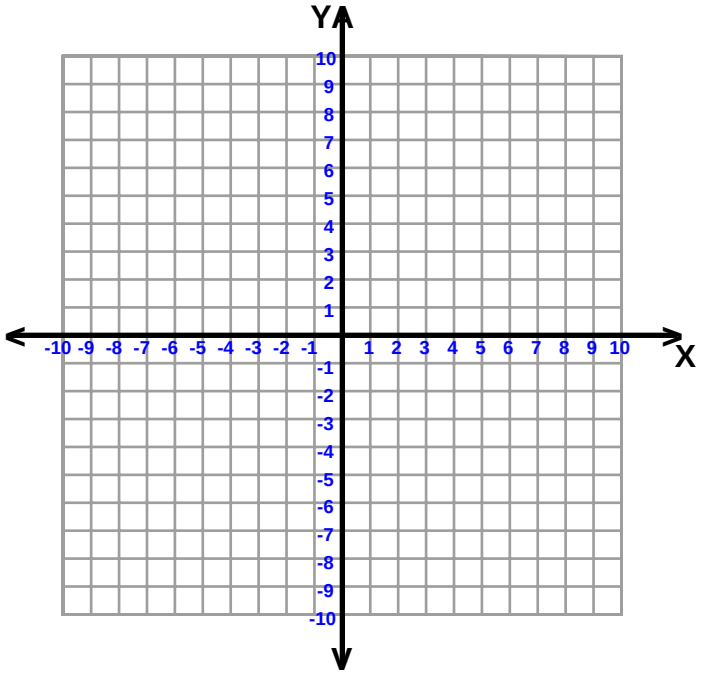
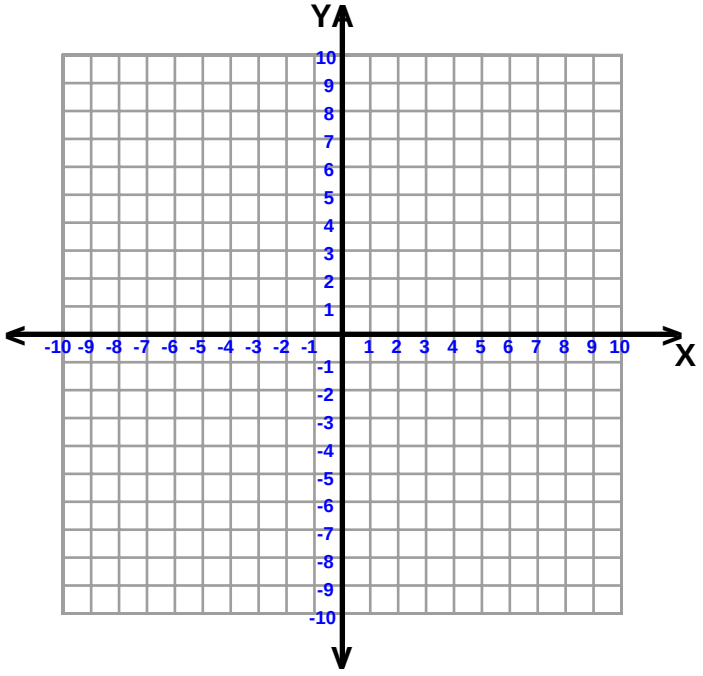
Classifying Conic Sections

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) $9x^2 + 36x + 16y^2 - 108 = 0$



2) $x^2 + y^2 + 4x = 0$



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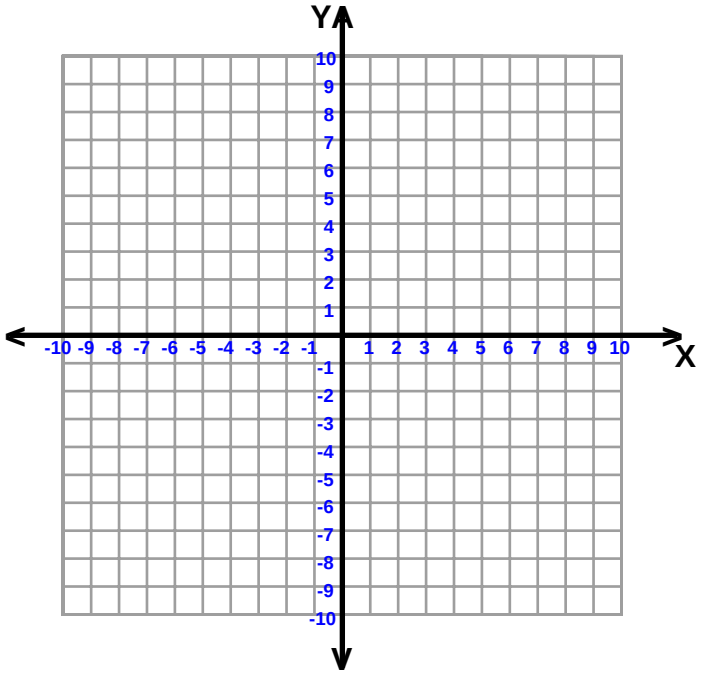
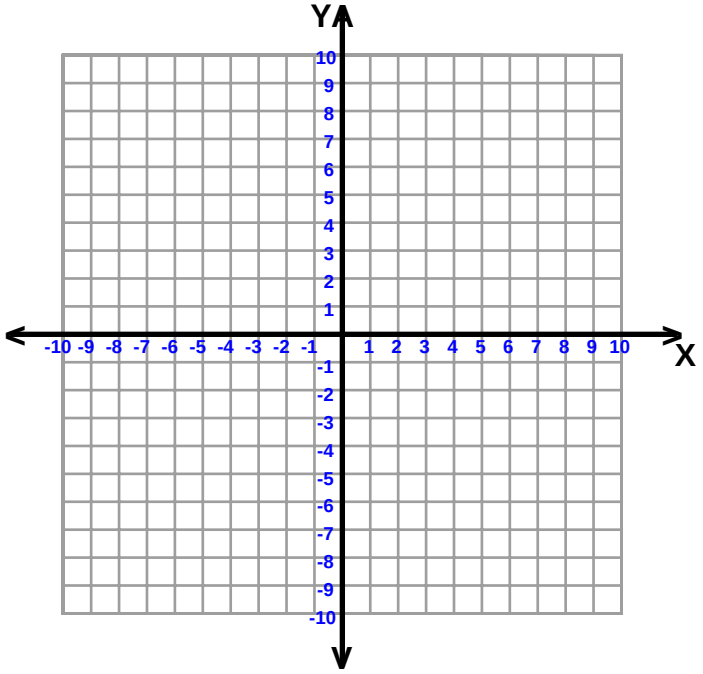
Classifying Conic Sections

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.

3) $-25x^2 - 50x + 4y^2 - 8y - 121 = 0$



4) $y = 4x^2 - 8x + 4$



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Classifying Conic Sections

Classify each conic section.

1) $y = 5(x - 3)^2 - 4$

Parabola

2) $(x - 5)^2 + (y - 4)^2 = 36$

Circle

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

Ellipse

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

Hyperbola

5) $\frac{(x - 2)^2}{25} + \frac{(y - 4)^2}{36} = 1$

Ellipse

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

Hyperbola

Classify each conic section and write its standard form equation.

7) $x^2 + y^2 - 2x + 6y + 1 = 0$

Circle

$(x - 1)^2 + (y + 3)^2 = 9$

8) $y = 5x^2 - 50x + 122$

Parabola

$y = 5(x - 5)^2 - 3$

9) $y = 2x^2 - 12x + 23$

Parabola

$y = 2(x - 3)^2 + 5$

10) $x^2 + y^2 + 10x - 4y + 25 = 0$

Circle

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

11) $36x^2 - 360x + 25y^2 - 100y + 100 = 0$

Ellipse

$\frac{(x - 5)^2}{25} + \frac{(y - 2)^2}{36} = 1$

12) $9x^2 - 90x + 16y^2 + 160y + 481 = 0$

Ellipse

$\frac{(x - 5)^2}{16} + \frac{(y + 5)^2}{9} = 1$

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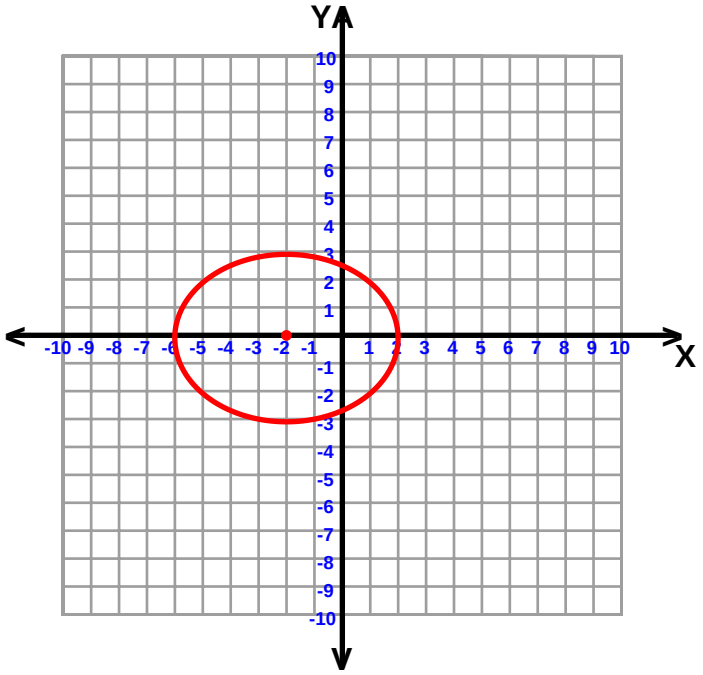
Classifying Conic Sections

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) $9x^2 + 36x + 16y^2 - 108 = 0$



Ellipse

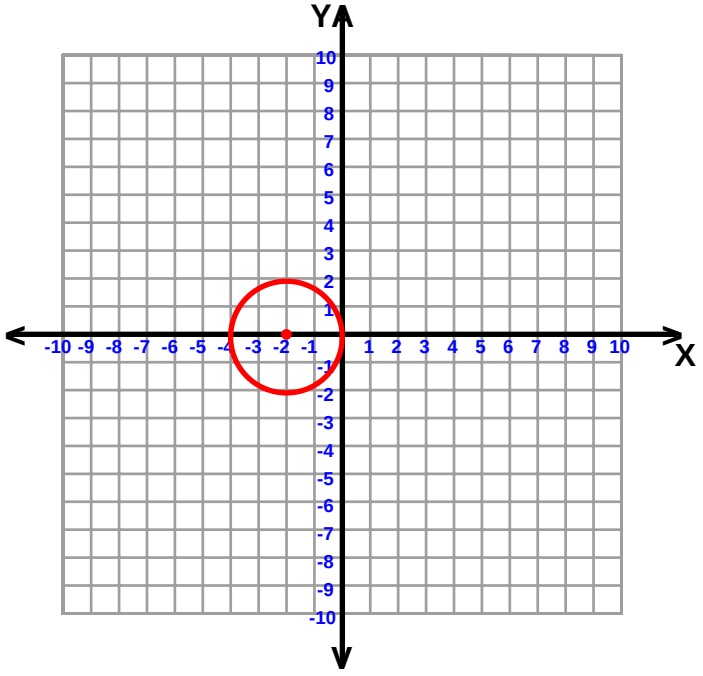
$\frac{(x + 2)^2}{16} + \frac{y^2}{9} = 1$

Center = (-2 , 0)

Vertices = (2 , 0) , (-6 , 0)

Foci = $(-2 + \sqrt{7}\ , 0)$, $(-2 - \sqrt{7}\ , 0)$

2) $x^2 + y^2 + 4x = 0$



Circle

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

Center: (-2,0)

Radius: 2

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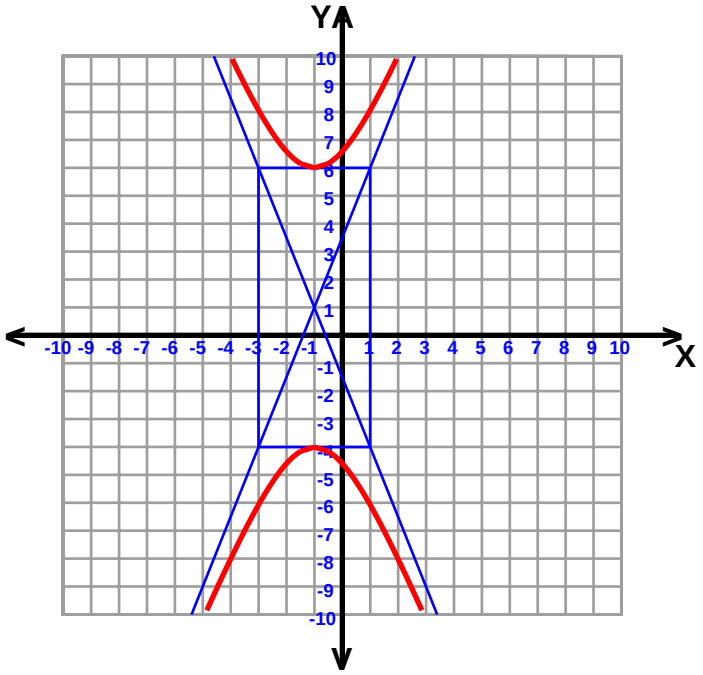
Classifying Conic Sections

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.

3) $-25x^2 - 50x + 4y^2 - 8y - 121 = 0$



Hyperbola

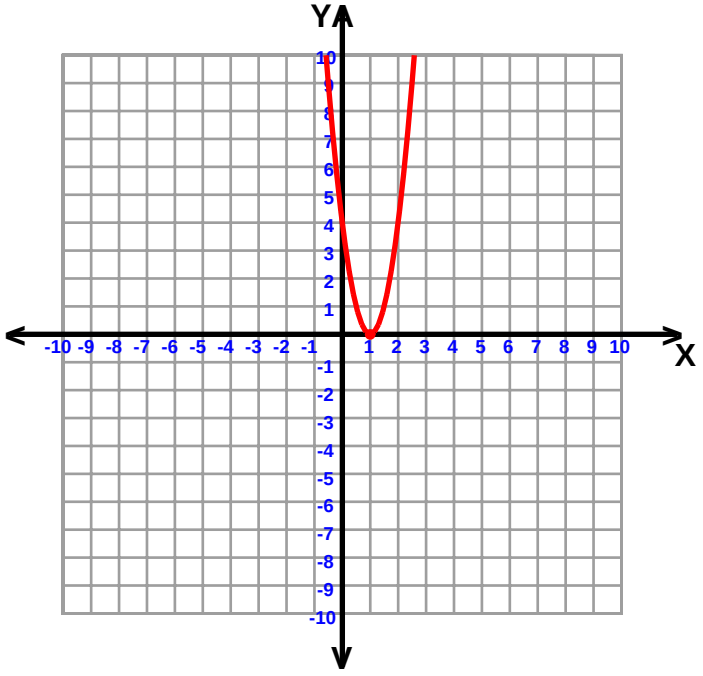
$\frac{(y - 1)^2}{25} - \frac{(x + 1)^2}{4} = 1$

Center: (-1 , 1)

Vertices: (-1 , 6) ; (-1 , -4)

Foci: $(-1 , 1 + \sqrt{29}\ )$; $(-1 , 1 - \sqrt{29}\ )$

4) $y = 4x^2 - 8x + 4$



Parabola

$y = 4(x - 1)^2$

Vertex: (1,0)

Focus: $(1, \frac{1}{16})$