

Math Sheet

Name _____ Score _____ / 16 Teacher _____ Date _____

Classifying Conic Sections

Classify each equation. The selected equation mode applies to this section.

1. $\frac{(x-5)^2}{9} + \frac{(y+2)^2}{36} = 1$

Type: _____

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

Type: _____

3. $y = 6 \cdot (x+3)^2 + 2$

Type: _____

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

Type: _____

5. $\frac{(x+3)^2}{25} + \frac{(y-4)^2}{16} = 1$

Type: _____

6. $(x+5)^2 + (y+4)^2 = 25$

Type: _____

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Classifying Conic Sections

Classify each general equation and write it in standard form.

7. $-12x^2 - 3y^2 + 72x + 24y - 144 = 0$

Type: _____ Standard form: _____

8. $-1x^2 - 1y^2 + 6x + 6y - 2 = 0$

Type: _____ Standard form: _____

9. $-32x^2 + 2y^2 + 192x - 8y - 248 = 0$

Type: _____ Standard form: _____

10. $6y^2 + 2x - 24y + 32 = 0$

Type: _____ Standard form: _____

11. $-72x^2 - 50y^2 - 288x - 200y + 1312 = 0$

Type: _____ Standard form: _____

12. $2x^2 + 2y^2 - 50 = 0$

Type: _____ Standard form: _____

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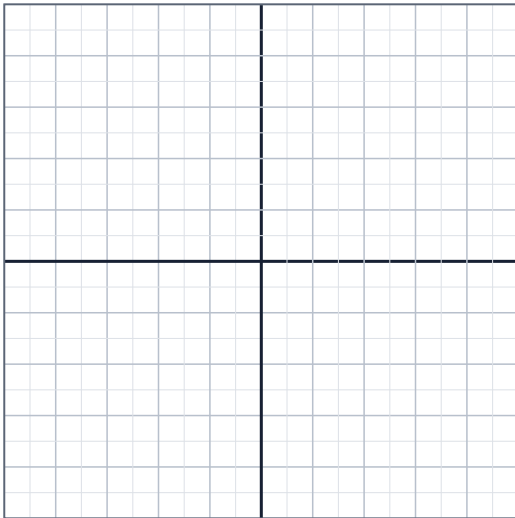
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Classifying Conic Sections

Classify, write standard form, graph and give the named features. Each grid square is 1 unit.

13. $50 \cdot x^2 + 8 \cdot y^2 - 200 \cdot x - 32 \cdot y + 32 = 0$

Standard form: _____



Each square = 1 unit

Type: _____

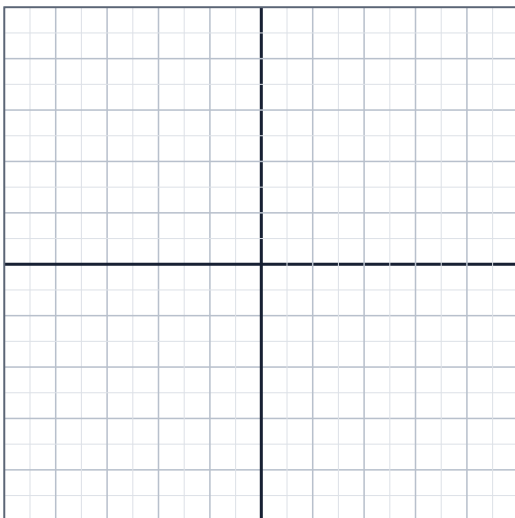
Center: _____

Vertices: _____

Foci: _____

14. $4 \cdot y^2 - 1 \cdot x + 8 \cdot y + 3 = 0$

Standard form: _____



Each square = 1 unit

Type: _____

Vertex: _____

Focus: _____

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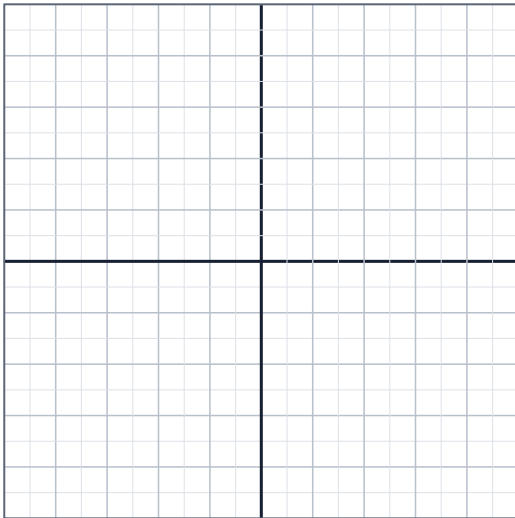
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Classifying Conic Sections

Classify, write standard form, graph and give the named features. Each grid square is 1 unit.

15. $2 \cdot x^2 + 2 \cdot y^2 + 4 \cdot x + 8 \cdot y + 2 = 0$

Standard form: _____



Each square = 1 unit

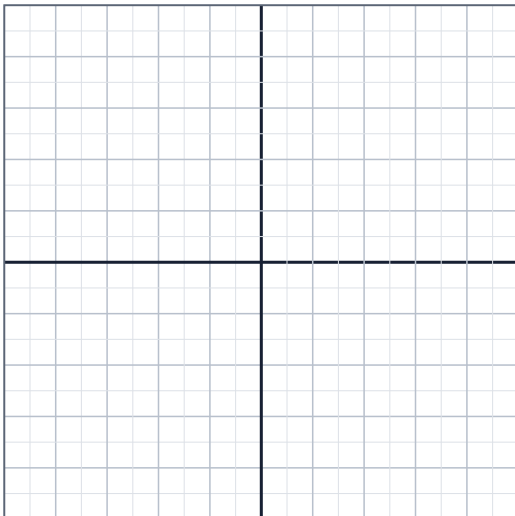
Type: _____

Center: _____

Radius: _____

16. $8 \cdot x^2 - 8 \cdot y^2 + 32 \cdot x - 16 \cdot y + 56 = 0$

Standard form: _____



Each square = 1 unit

Type: _____

Center: _____

Vertices: _____

Foci: _____

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Classifying Conic Sections

Answer Key

Classify each equation. The selected equation mode applies to this section.

1. $\frac{(x - 5)^2}{9} + \frac{(y + 2)^2}{36} = 1$

Type: ellipse

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

Type: circle

3. $y = 6(x + 3)^2 + 2$

Type: parabola

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

Type: hyperbola

5. $\frac{(x + 3)^2}{25} + \frac{(y - 4)^2}{16} = 1$

Type: ellipse

6. $(x + 5)^2 + (y + 4)^2 = 25$

Type: circle

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Classifying Conic Sections

Answer Key

Classify each general equation and write it in standard form.

7. $-12x^2 - 3y^2 + 72x + 24y - 144 = 0$

Type: **ellipse**

Standard form: $\frac{(x-3)^2}{1} + \frac{(y-4)^2}{4} = 1$

8. $-x^2 - y^2 + 6x + 6y - 2 = 0$

Type: **circle**

Standard form: $(x-3)^2 + (y-3)^2 = 16$

9. $-32x^2 + 2y^2 + 192x - 8y - 248 = 0$

Type: **hyperbola**

Standard form: $\frac{(x-3)^2}{1} - \frac{(y-2)^2}{16} = 1$

10. $6y^2 + 2x - 24y + 32 = 0$

Type: **parabola**

Standard form: $x = -3(y-2)^2 - 4$

11. $-72x^2 - 50y^2 - 288x - 200y + 1312 = 0$

Type: **ellipse**

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

12. $2x^2 + 2y^2 - 50 = 0$

Type: **circle**

Standard form: $x^2 + y^2 = 25$

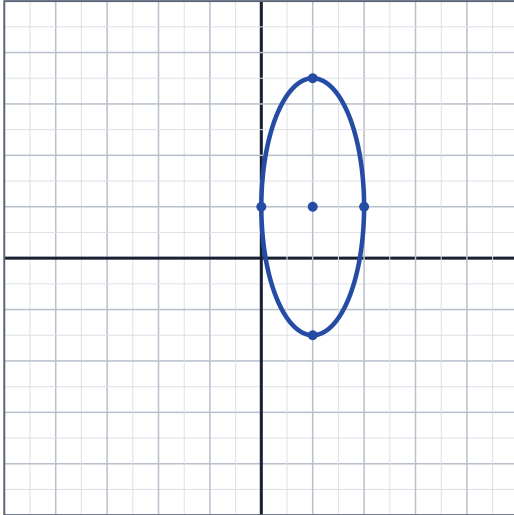
Classifying Conic Sections

Answer Key

Classify, write standard form, graph and give the named features. Each grid square is 1 unit.

13. $50 \cdot x^2 + 8 \cdot y^2 - 200 \cdot x - 32 \cdot y + 32 = 0$

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



Each square = 1 unit

Type: ellipse

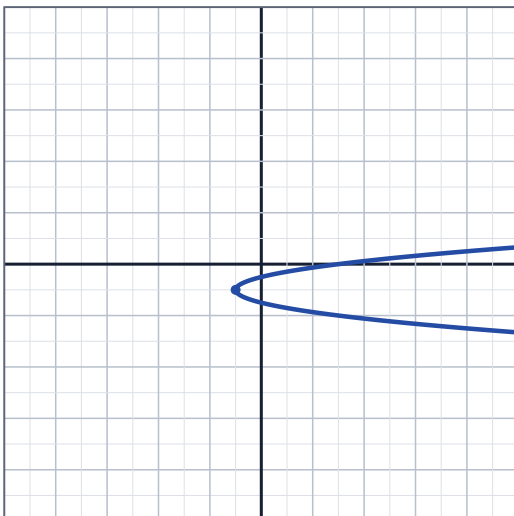
Center: (2,2)

Vertices: (2,7), (2,-3)

Foci: $(2, 2 + \sqrt{21})$, $(2, 2 - \sqrt{21})$

14. $4 \cdot y^2 - 1 \cdot x + 8 \cdot y + 3 = 0$

Standard form: $x = 4 \cdot (y + 1)^2 - 1$



Each square = 1 unit

Type: parabola

Vertex: (-1, -1)

Focus: $(-\frac{15}{16}, -1)$

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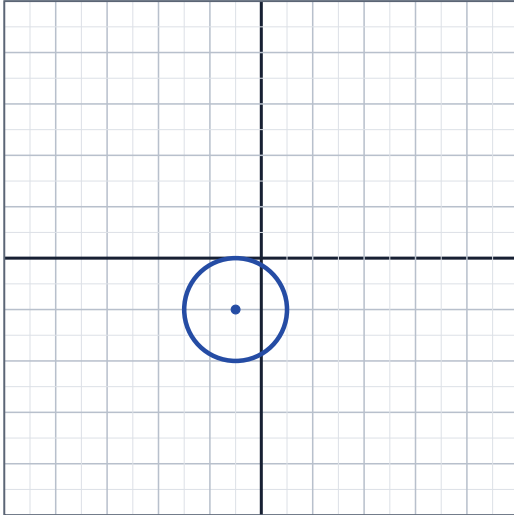
Classifying Conic Sections

Answer Key

Classify, write standard form, graph and give the named features. Each grid square is 1 unit.

15. $2 \cdot x^2 + 2 \cdot y^2 + 4 \cdot x + 8 \cdot y + 2 = 0$

Standard form: $(x+1)^2 + (y+2)^2 = 4$



Each square = 1 unit

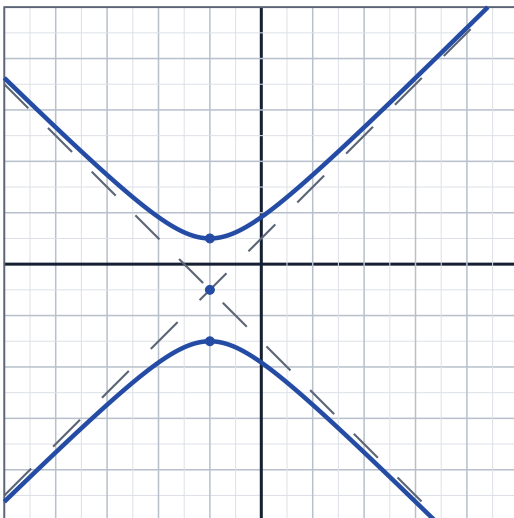
Type: circle

Center: (-1, -2)

Radius: 2

16. $8 \cdot x^2 - 8 \cdot y^2 + 32 \cdot x - 16 \cdot y + 56 = 0$

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



Each square = 1 unit

Type: hyperbola

Center: (-2, -1)

Vertices: (-2, 1), (-2, -3)

Foci: (-2, -1 + 2√2), (-2, -1 - 2√2)