

Name _____ Date _____ Period _____

DIRECTIONS: For #1-2, respond in the provided blanks.

1. A parabola has its vertex at $(4, -7)$ and directrix of $x = 2$. Identify the **focus** of this parabola.

2. A parabola has its vertex at $(-2, -3)$ and focus at $(-5, -3)$. Identify the **directrix** of this parabola.

DIRECTIONS: For #3-4, **write equations** for the described parabolas in the provided blanks.

3. Focus $(6, 2)$; Vertex $(6, 7)$

4. Focus $(-2, 4)$; Directrix $y = 6$

DIRECTIONS: For #5-6, **rewrite the equations** in the standard form for parabolas. Then identify the **vertex**, **focus**, **directrix**, and **axis of symmetry** for the parabola.

5. $y^2 - 16x - 6y - 7 = 0$

6. $x^2 - 12x + 4y + 28 = 0$

Equation:

Vertex: _____

Focus: _____

Directrix: _____

Axis: _____

Equation:

Vertex: _____

Focus: _____

Directrix: _____

Axis: _____

DIRECTIONS: For #7, **write an equation** for an ellipse with the given intercepts.

7. x-intercepts: ± 2 ; y-intercepts: ± 4 _____

DIRECTIONS: For #8-9, **write equations** for ellipses with the given foci and sum of focal radii.

8. Foci: $(-2, 0), (2, 0)$;
Sum of focal radii = 6

9. Foci: $(4, 2), (4, 8)$;
Sum of focal radii = 16

DIRECTIONS: For #10-11, **rewrite the equations** in the standard form for ellipses. Then identify the **center**, direction of the **major axis** (horizontal or vertical), **vertices**, **co-vertices**, and **foci**.

10. $3x^2 + 4y^2 - 36x + 32y + 120 = 0$

11. $4x^2 + y^2 + 16x - 6y - 11 = 0$

Equation:

Center: _____

Major axis: _____

Vertices: _____

Co-vertices: _____

Foci: _____

Equation:

Center: _____

Major axis: _____

Vertices: _____

Co-vertices: _____

Foci: _____