Name _____ Date _____ Period _____

<u>DIRECTIONS</u>: 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.

_____

_____

<u>DIRECTIONS</u>: 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 $y = 6$

_____

_____

<u>DIRECTIONS</u>: 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), **verticies**, **co-verticies**, and **foci**.

    10. $3x^2 + 4y^2 - 36x + 32y + 124 = 0$
                        11. $4x^2 + y^2 + 16x - 6y - 11 = 0$

    Equation: Equation:

    _____   _____

    Center: _____   Center: _____

    Major axis: _____   Major axis: _____

    Verticies: _____   Verticies: _____

    Co-verticies: _____   Co-verticies: _____

    Foci: _____   Foci: _____