Precalculus Unit 8 Review

Name ______ period _____ date _____

Identify the type of conic, list all the key features, and accurately draw a graph.

- For circles, list the center and radius.
- For parabolas, list the vertex, focus, and directrix.
- For ellipses, list the center, vertices, and foci.
- For hyperbolas, list the center, vertices, foci, transverse axis, and asymptotes.

1.
$$x^2 = -12y$$

2.
$$\frac{x^2}{16} - \frac{y^2}{4} = 1$$

3.
$$(x-2)^2 + y^2 = 25$$

4.
$$\frac{(x-1)^2}{49} + \frac{(y+5)^2}{9} = 1$$

$$5. \quad 4x^2 + y^2 = 64$$

6.
$$(y+3)^2 = 8(x-2)$$

7.
$$(x+1)^2 + (y+2)^2 = 12$$

8.
$$4(y-3)^2 - 36(x-4)^2 = 36$$

Write the following equations in standard form and identify the type of conic. 9. $x^2 + y^2 + 8x - 33 = 0$

9.
$$x^2 + y^2 + 8x - 33 = 0$$

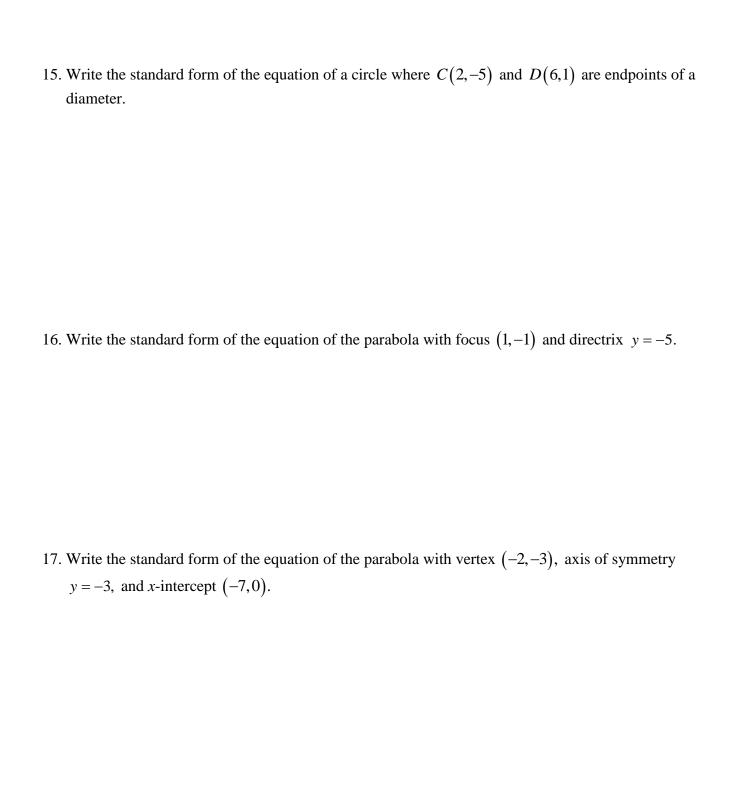
10.
$$25x^2 + 9y^2 + 250x - 36y - 239 = 0$$

11.
$$9x^2 - 4y^2 - 108x + 8y - 4 = 0$$

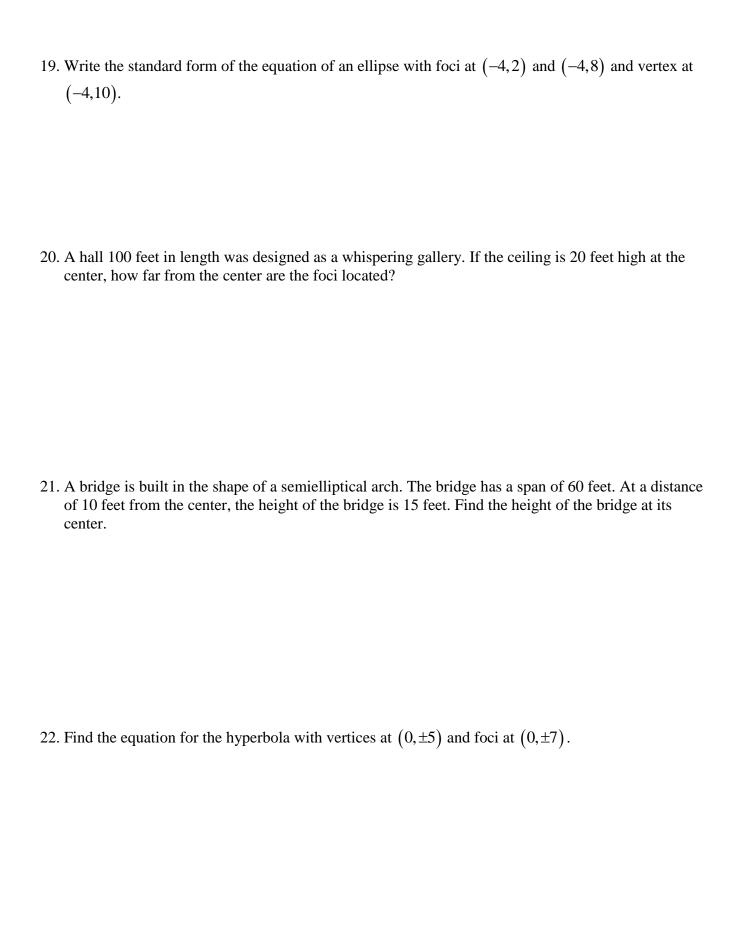
12.
$$y^2 + 4x + 20y + 64 = 0$$

13. Write the standard form of the equation of the circle with radius r = 4 and center (2, -5).

14. Write the standard form of the equation of a circle with center at the point (1,6) that is tangent to the line x=3.



18. A parabolic reflector (paraboloid of revolution) is used by TV crews at football games to pick up the referee's announcements, quarterback signals, and so on. A microphone is placed at the focus of the paraboloid. If a certain reflector is 48 inches wide and 18 inches deep, where should the microphone be placed?



23. Find the equation for the hyperbola with center (2,3), focus (0,3), and vertex (1,3).