Accelerated Algebra 2 Name ________________________________

Chapter 10 Test: **Conic Sections – Graphs and Equations** Period ________

1. Write the equation of a circle with center (3, -1) and contains the point (-4, 1). 3 pts

2. Given $x = \frac{1}{28}y^2$, how far is the **focus** from the **vertex**? 1 pt

3. Graph and label the center, vertices, co-vertices, and foci of $\frac{(x+1)^2}{16} + \frac{(y-2)^2}{9} = 1$. Then identify the domain and range. 7 pts

4. Write an equation in standard form for the ellipse with center (-4, 0), length of vertical major axis is 10 and length of horizontal minor axis is 5. 3 pts

5. Identify the conic section represented by the equation $1 - 3(x-2)^2 = 7(y-4)^2$. 1 pt

6. Write an equation in standard form for the parabola with vertex (0, 0) and the directrix is y = -8. 2 pts

7. Find the distance **between the foci** (focus 1 and focus 2) of the hyperbola $\frac{x^2}{54} - \frac{y^2}{27} = 1.$
2 pts

8. Write the equation of a parabola with focus (2, 0) and directrix x = -5. 3 pts

9. Write the equation of a circle that has a diameter endpoints at (5, 1) and (2, 0). 3 pts

10. Graph $y - 1 = -\frac{1}{16}(x - 2)^2$. Then, write the equation of the axis of symmetry and directrix. 5 pts

11. Graph and label the center, vertices, co-vertices, and foci of $\frac{(y-1)^2}{25} - \frac{(x+2)^2}{9} = 1$. Also identify the equation of the asymptotes. 6 pts

12. Write the equation below in standard form and identify the conic section it represents.
$16x^2 + 9y^2 + 64x - 18y - 71 = 0$. 4 pts

13. Write the equation of the line tangent to $(x - 1)^2 + (y - 3)^2 = 25$ at point (-1, -3). 3 pts

14. Find x such that the 2 points (x, -9) and (5, -4) are 5 units apart. 3 pts

15. Write the equation of the hyperbola with asymptote $y + 1 = \frac{1}{2}(x - 2)$ and has a horizontal conjugate axis. 3 pts

16. A city park in the form $\frac{x^2}{8} + \frac{y^2}{100} = 1$ is being renovated. The new park will have a length and width double that of the original park. Write an equation for the design of the new park. 3 pts