

Name \_\_\_\_\_

Period \_\_\_\_\_

Date \_\_\_\_\_

## Algebra 2: Review Worksheet A

2008-2009

## Topic 10: Conic Sections

Directions: Calculators are not allowed. Show your work on a separate sheet of paper and attach.

Write the equation of a circle with a center of (0, 0) and the given radius.

- 1) radius = 5      2) radius = 8      3) radius = 9      4) radius = 10

Find the center of each given circle.

- 5)  $(x-3)^2 + (y-8)^2 = 81$       6)  $(x+2)^2 + (y+9)^2 = 1$   
7)  $(x+4)^2 + (y-7)^2 = 49$       8)  $(x-6)^2 + (y+1)^2 = 20$

Write the equation of a circle with center at (0, 0) and that passes through the given point.

- 9) (5, 2)      10) (-8, 1)      11) (6, -3)      12) (-4, -6)

Write the equation of the given circle in standard form:  $(x-h)^2 + (y-k)^2 = r^2$

- 13)  $x^2 + y^2 - 6x + 4y + 1 = 0$       14)  $x^2 + y^2 + 4x - 8y + 3 = 0$   
15)  $x^2 + y^2 - 12x - 2y - 5 = 0$       16)  $x^2 + y^2 + 10x + 6y - 4 = 0$

17) Given the ellipse  $\frac{x^2}{49} + \frac{y^2}{64} = 1$ , find the vertices.

18) Given the ellipse  $\frac{x^2}{81} + \frac{y^2}{16} = 1$ , find the vertices.

19) Write the equation in standard form of an ellipse whose vertices are (0, 5) and (0, -5) and whose co-vertices are (2, 0) and (-2, 0).

20) Write the equation in standard form of an ellipse whose vertices are (9, 0) and (-9, 0) and whose co-vertices are (0, 4) and (0, -4).

21) Write the equation in standard form of an ellipse whose vertices are (0, 7) and (0, -7) and whose foci are (0, 2) and (0, -2).

22) Write the equation in standard form of an ellipse whose vertices are (10, 0) and (-10, 0) and whose foci are (5, 0) and (-5, 0).

23) Given the ellipse  $\frac{(x-4)^2}{16} + \frac{(y+3)^2}{22} = 1$ , find the foci.

24) Given the ellipse  $\frac{(x-2)^2}{14} + \frac{(y+8)^2}{9} = 1$ , find the foci.

25) Find the eccentricity of the ellipse:  $\frac{x^2}{25} + \frac{y^2}{36} = 1$

26) Find the eccentricity of the ellipse:  $\frac{x^2}{4} + \frac{y^2}{25} = 1$

27) Write the equation in standard form of the given ellipse:  $x^2 + 3y^2 + 8x - 12y + 10 = 0$