Algebra 2H HW # _____ Name_____

10.2 and 10.3

Date_____

1. Graph: $-12x = y^2$. Find and locate vertex, axis of symmetry, focus and directrix.

2. Graph: $x = \frac{1}{2}(y+1)^2 - 2$. Find and locate vertex, axis of symmetry, focus and directrix.

3. Graph: $x^2 - 8x - 4y + 12 = 0$. Find and locate vertex, axis of symmetry, focus and directrix.

4. Find the center and radius of each circle. Write in standard form as needed.

a) $(x+8)^2 + (y-3)^2 = 49$

b) $5x^2 + 5y^2 = 180$

c) $x^2 + y^2 - 18x = 0$

d) $x^2 + y^2 - 10x + 2y - 6 = 0$

5. Write the equation of a circle in standard form. Graph the circle.

a) center $(2, 0)$; $r = 2$ b) center $(3, -1)$; $r = \sqrt{17}$

6. The endpoints of the diameter of a circle are $(-1, 6)$ and $(5, 0)$. Write the equation of this circle in standard form.

7. The center of a circle is $(4, -2)$. The circle passes through $(0, 1)$. Write the equation of this circle in standard form.

8. A circle has its center in quadrant 2, its radius is 3 and it is tangent to the y- axis at $(0, 1)$. Write the equation for this circle in standard form.

9. Write the equation of a line in slope-intercept form that is tangent to the circle $x^2 + y^2 = 5$ at $(2, 1)$.

SELECTED ANSWERS: 1. V(0, 0); axis y = 0; F(-3, 0); d: x= 3; 2. V(-2, -1); axis y = -1; F(-1.5, -1); d: x = -2.5 3. V(4, 1); axis x = 4; F(4, 2); d: y = 0; 4c) C(9, 0); r = 9

d) C(5, -1); $r = 4\sqrt{2}$ or ≈ 5.7 6. $(x-2)^2+(y-3)^2=18$ 7. $(x-4)^2+(y+2)^2=25$

8. $(x+3)^2+(y-1)^2=9$ 9. $y=-2x+5$