Algebra II Homework #9

1) Five less than Natalie's age is triple the difference between Nina's and Angela's ages. Four more than double the difference between Natalie's age and Angela's age is ten less than Nina's age. If the sum of their ages is 43, how old is each girl?

2) Graph the solution set for the following system of inequalities:

$$4x-3y>-9 \text{ and } 2x+1y\geq -2$$

3) Joshua can paddle his canoe fifteen miles up river in five hours but it takes him only one hour to paddle his canoe back down river to where he started. If he paddles his canoe at the same rate throughout both trips, how fast does Joshua paddle and what is the current of the river?

4) Graph the solution set for the following system of inequalities:

$$x-3y\leq 6 \text{ or } 3x+2y<8$$

5) Emily has a total of 35 coins in her purse consisting of nickels, dimes, and quarters. The value of the coins totals \$5.40. If sum of the number of nickels and dimes is one more than the amount of quarters, how many quarters, dimes, and nickels does Emily have?

6) Write an equation for a function that has a graph with the shape of $y=x$ but is shifted 5 units down, shifted 7 units to the right, is "fatter" by a factor of 2, and is upside down.

7) Find the equation of a circle if a point on the circumference of that circle is (–5, 3) and the center of the circle is at (–1, 7)

8) Find the center and diameter AND then graph the equation $(x-2)^2+(y-3)^2=64$

9) Write an equation for a function that has a graph with the shape of $y=x^2$ but is shifted 6 units up, shifted 5 units to the left, and is upside down.

10) Find the equation of a circle if the endpoints of a diameter of that circle are (6, –2) and (–4, – 8)

11) Find the center and radius AND then graph the equation $(x-3)^2+(y+4)^2=36$

12) Write an equation for a function that has a graph with the shape of $y=|x|$ but is shifted 4 units down, shifted 7 units to the right, and is "skinnier" by a factor of 3.

13) Find the equation of a circle if the endpoints of a diameter of that circle are (–2,9) and (8, – 1)

14) Find the center and radius AND then graph the equation $(x+2)^2+(y-4)^2=25$

15) Write an equation for a function that has a graph with the shape of $y=x^3$ but is shifted 8 units down, shifted 2 units to the left, upside down, and is "fatter" by a factor of 4.

16) Find the equation of a circle if the endpoints of a diameter of that circle are (–7, –1) and (–5, 7)

17) Find the center and radius AND then graph the equation $(x+2)^2+(y+1)^2=49$

18) Write an equation for a function that has a graph with the shape of $y=x^2$ but is shifted 2 units up, shifted 6 units to the right, upside down, and is "skinnier" by a factor of 5.

19) Find the equation of a circle if a point on the circumference of that circle is (4, –6) and the center of the circle is at (–8, –3)

20) Write an equation for a function that has a graph with the shape of $y=|x|$ but is shifted 3 units down, shifted 7 units to the left, and is upside down.