Secondary II-Unit 4.3 Systems & Conics Day 4 HW Name_____

Solving Systems of Equations by Substitution

Date_____ Period____

Solve each system by substitution.

1) $y = -3x + 14$
$y = -5x + 22$

2) $y = 8x - 8$
$-6x + 4y = -6$

3) $-8x - 2y = 8$
$6x + y = -10$

4) $y = -5x + 3$
$-7x - 2y = 0$

5) $y = -x^2 + 4x + 6$
$y = -2x + 11$

6) $y = x^2 - 6x + 9$
$y = -x + 5$

7) $y = x^2 - 2x - 6$
$y = 4x + 10$

8) $y = -2x + 6$
$y = x^2 + 5x + 6$

9) $y = 4$
$x^2 + y^2 = 20$

10) $y = 5x - 20$
$y = x^2 - 5x + 5$

WRITE a system of equations that models the given situation. Make sure to define your variables. Do not solve.

11) A group of 28 people attended the fieldtrip. The number of teachers on the fieldtrip was 20 less than the number of students.

12) Mr. Newman bought 8 tickets to a chili supper and spent a total of $30. He bought a combination of adult tickets for $5 each and child tickets $3 each.

13) A total of 24 students are in Alfred's class. The number of girls in the class is 3 more than twice the number of boys.

For each problem define your variables, write a system of equations, and solve the system of equations by substitution.

14) A collection of dimes and quarters is worth $15.25. There are 103 coins in all. How many of each type of coins are there?

15) Chandler's Bakery sold one customer 6 dozen chocolate chip cookies and 7 dozen oatmeal cookies for $73. The bakery also sold another customer 1 dozen chocolate chip cookies and 1 dozen oatmeal cookies for $11 . How much does each type of cookie cost for a dozen?

16) Javier lived in Portugal and Brazil for a total of 14 months in order to learn Portuguese. He learned 130 new words per month living in Portugal, and 150 new words per month living in Brazil. In total, he learned 1920 new words. How long did Javier live in each place?

17) In a basketball game Jane and Francine made 20 baskets. Jane scored 4 times as many baskets as Francine. How many baskets did Jane score?

18) Charlie went to Juarez, Mexico, on a shopping trip. He bought rings at $5 each and bracelets at $8 each. If he bought a total of 19 items and spent $131, how many bracelets and rings did he buy?

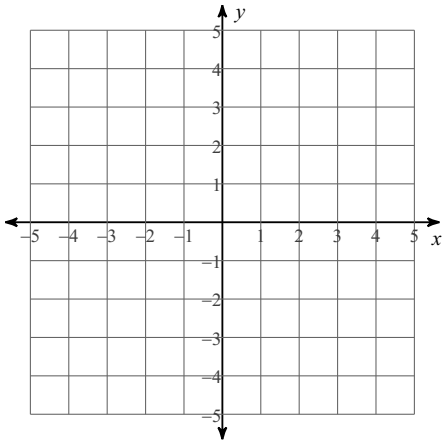
Solve the system of equations by substitution.

19) The height, h, of a baseball, in meters, at time t seconds after it is tossed out of a window is modeled by $h = -5t^2 + 20t + 15$. A boy shoots at the baseball with a paintball gun. The trajectory of the paintball is given by the equaiton $h = 3t + 3$.
Will the paintball hit the baseball? If so, at what time and height?

Solve each system by graphing.

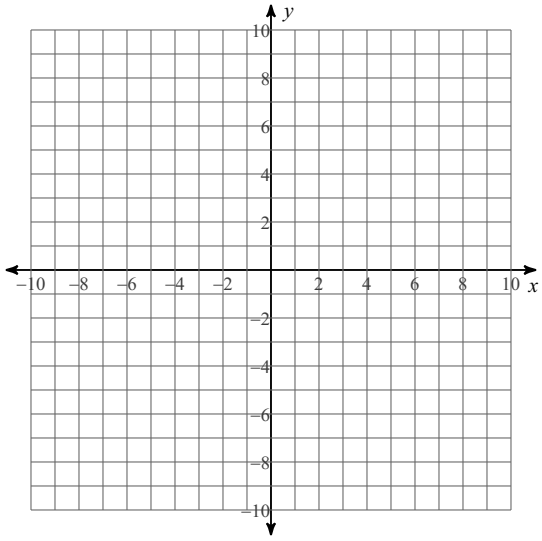
20) $y = x - 4$

$y = -\frac{2}{3}x + 1$



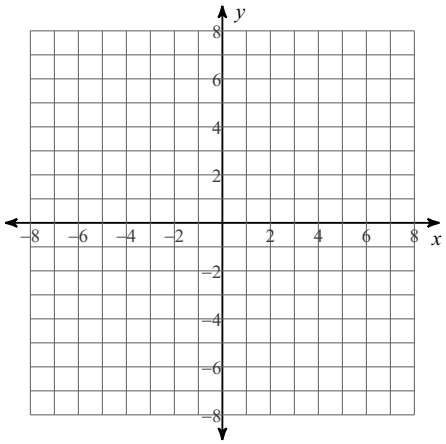
21) $x^2 + y^2 = 64$

$y = x - 8$

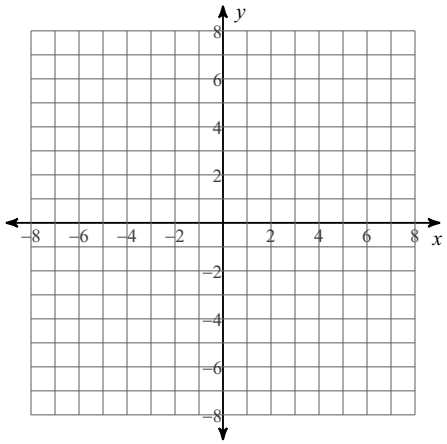


Identify the center and radius of each. Then sketch the graph.

22) $(x-2)^2 + (y+4)^2 = 4$



23) $(x+2)^2 + y^2 = 22$



Use the information provided to write the standard form equation of each circle.

24) Center: $(-9, 1)$
Radius: $\sqrt{2}$

25) Center: $(12, 8)$
Point on Circle: $(15, 2)$

Factor each completely.

26) $k^2 - 8k - 20$

27) $n^2 - 3n$

28) $a^2 - 11a + 18$

29) $-x^2 + 6x - 9$

30) $-x^2 - 6x + 16$

31) $k^2 - 4$