

**Math 080**  
**Systems of Equations and Inequalities Worksheet**

State if the system of equations is consistent, inconsistent, or dependant, and whether the system has one solution, no solutions, or infinite number of solutions.

1.  $-6x + 3y = 4$   
 $12x - 6y = 8$

2.  $5x + 3y = 2$   
 $15x + 9y = 5$

3.  $x + y = 5$   
 $2x - y = 7$

4.  $\frac{2}{3}x - 3y = 4$   
 $3x + 2y = 2$

5.  $x - 2y = 3$   
 $2x - y + 3z = 2$   
 $x + y + 2z = 4$

6.  $x + y + 2z = 3$   
 $3x - y + 3z = 10$   
 $2x + 2y + 4z = 6$

Solve:

7. Determine the measures of two supplementary angles if the measure of one angle is four more than twice the other angle.

8. Louis invested \$3,000, part at 9% and part at 5%. He earned the same amount of interest as a single 6.5% account. How much money was invested in each of the two accounts?

9. Rita rides a bike for half an hour and jogs for half an hour for exercise. She can ride the bike at five times faster than the speed that she can run. If she travels 14 miles, determine the speed of the bike and the speed she runs.

Determine the distance between the points and determine the midpoint of the line segment.

10.  $(1, 5)$ ,  $(-2, -6)$

Write the equation of the circle.

11. Center = (0,3); Radius = 2

Determine the center point and the radius of the equation.

12.  $(x - 2)^2 + (y + 1)^2 = 16$

13.  $x^2 + y^2 - 3x + 6y - 3 = 0$

14. Find the diameter, radius, center point, and equation of the circle that is bisected by the line incident to the circle at points (-1, 3) and (4, 6).