

**DSPM 0800**  
**Chapter 7 Review**

Name: \_\_\_\_\_

Identify each inequality as linear or nonlinear.

1.  $2x - 3y > x + 8$

2.  $4x^2 + 2x < x - 9$

3.  $5(x - 3) \geq 4 - (x + 1)$

4.  $\frac{1}{2}x - 4 \geq y + \frac{3}{8}$

5.  $\frac{1}{x} - 3x \geq 6$

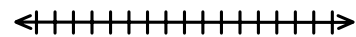
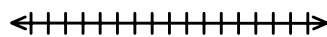
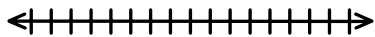
6.  $1.5x - 12.6 < 14.7x$

Solve each inequality and represent the solution by using the number line and interval notation.

7.  $5x - 13 > 3(1 - x)$

8.  $173 - x < 359$

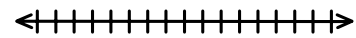
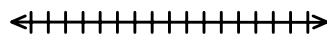
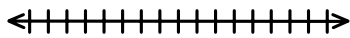
9.  $5a - 7 \geq 8a + 1$



10.  $2.1x + 31.71 \leq 8.19 - 3.5x$

11.  $5x + 9 < 2x - 3$

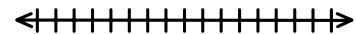
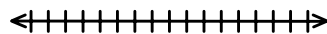
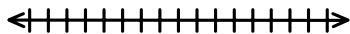
12.  $3(x + 3) < 4(x + 1) - 2(x - 2)$



13.  $3(x - 1) + (x - 1) < 4x - 3$

14.  $8x < 8x - 16$

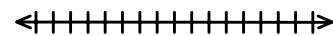
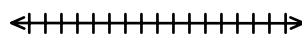
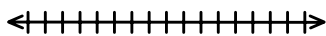
15.  $z - \frac{4}{17} > \frac{15}{34}$



16.  $-3 < 4 - 2x \leq 0$

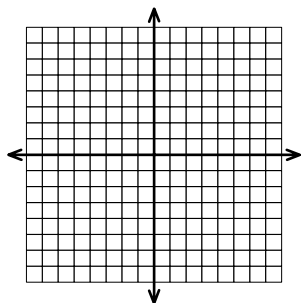
17.  $15 < 4(2x - 1) + 5 \leq 25$

18.  $-2 < 3(x - 4) - 2 \leq 1$

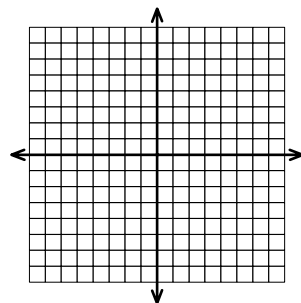


Graph each linear inequality in two variables.

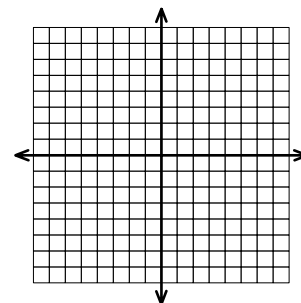
19.  $y < -2x + 5$



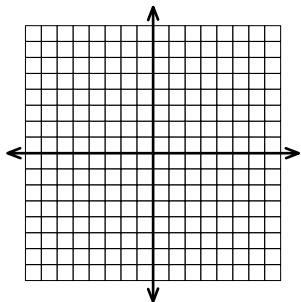
20.  $x + 3 > 2x - 1$



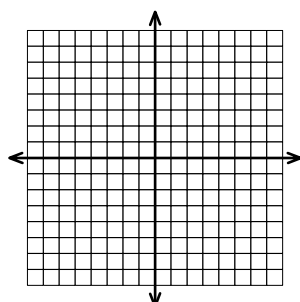
21.  $3y \leq 2x + 9$



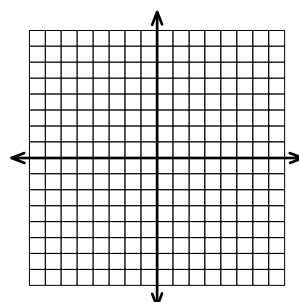
22.  $y + 13 \geq 8$



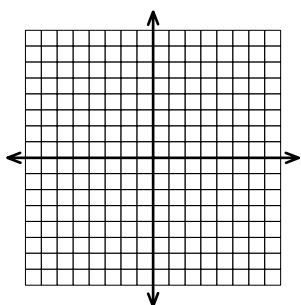
23.  $2.7x + 5.4y \geq 16.2$



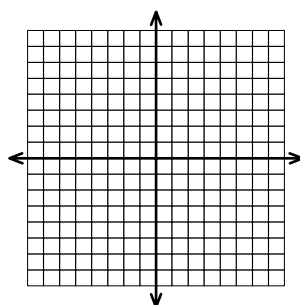
24.  $x - y < 7$



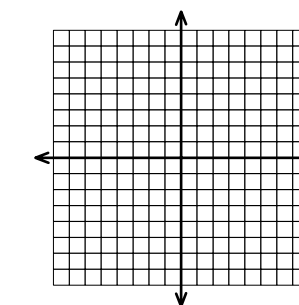
25.  $\frac{x}{12} + \frac{y}{9} > -\frac{1}{3}$



26.  $y > -5x + 7$

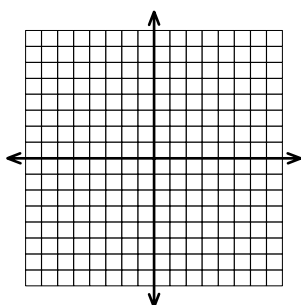


27.  $x - 7y > 21$

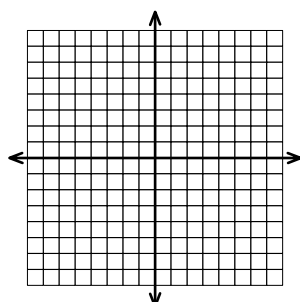


Graph each system of linear inequalities in two variables. Label the points of intersection.

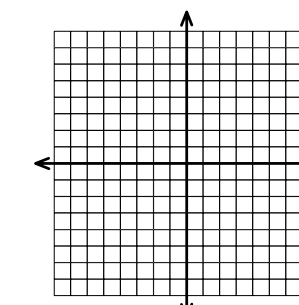
28.  $x - y > 4$   
 $x + 2y > 4$



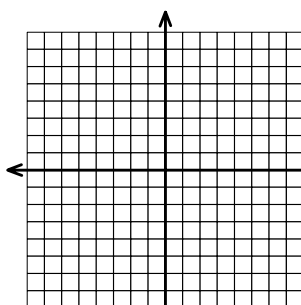
29.  $y \geq 4x - 5$   
 $y > -3x + 4$



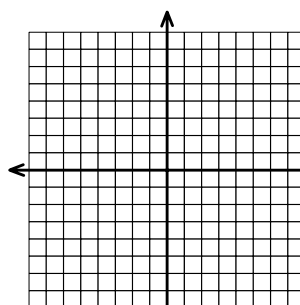
30.  $3y - 1 > 2$   
 $x - 3 \leq -5$



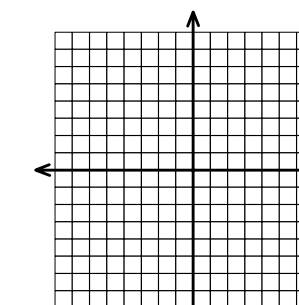
31.  $2y + 2 > y$   
 $y < -x + 1$



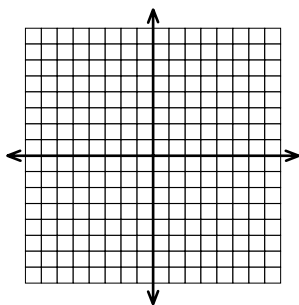
32.  $2(x - 1) - 4 > 0$   
 $2x + y \leq 3$



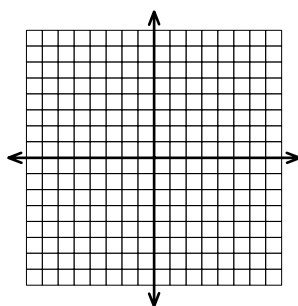
33.  $x - 5y \leq 15$   
 $x + 5y \leq -5$



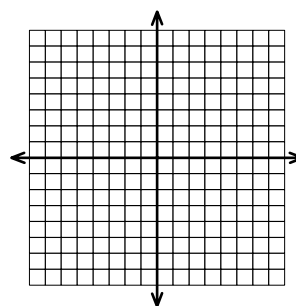
34.  $y < 3x + 7$   
 $x - y > -1$



35.  $y > x$   
 $x > 2 - y$



36.  $x + y < 9 - x$   
 $2x + y > 5$



Write and solve a linear inequality in one variable to represent the application.

37. The average of three exams must be at least 80 to pass a course. If the first exam score was 83 and the second exam score was 72, what are the possible scores on the third exam that will enable the student to pass the course?
38. Your company has placed a limit on car rentals of no more than \$150.00 per trip. If the rental agency charges a flat fee of \$49.95 plus \$0.18 per mile driven, what range of miles will keep you within budget?
39. Ali must average sales of more than \$1500 per month in order to receive his six-month commission. For the first five months, his sales were \$2100, \$1300, \$1650, \$1250, and \$1725. What should his sales be in the sixth month in order for him to receive his commission?

For each situation, write and graph a linear inequality in two variables that represents the situation. From the graph, determine two possible solutions.

40. Oksana has at most \$85 to spend on plants for her flower garden. She can buy rhododendrons at \$4 a pot and azaleas at \$6 a pot. What combinations of plants can she buy and not go over budget?
41. A Cub Scout earns 5 points for every good deed and 2 points for every activity sheet completed. If a scout must earn at least 20 points in order to receive a medal, what combinations of good deeds and activity sheets will suffice?
42. Rosa gained 5 points for every homework exercise she solved correctly and lost 3 points for every exercise she solved incorrectly or skipped. What combinations would allow her to score at least an 80 on her homework assignment?