Advanced Algebra Ch. 2 review   Name _____

Use these ordered pairs to answer questions 1-3.

$$(0 , 3), (-1, 2), (2, 3), (-2, 4), (1, 2), (3, 0)$$

1. List the Domain: _____

   Range: _____

2. Convert the relation to a mapping diagram.

3. Is the relation a function?   YES   OR   NO   Explain:

Find the slope of the line that passes through the given points and then write the equation in all 3 forms.

4. (3, -2), (5, 4)

Point-Slope: _____

Slope-Intercept: _____

Standard: _____

5. Find the equation of the line that is (parallel/perpendicular) to the line $y = \dfrac{1}{4}x - 2$ and goes
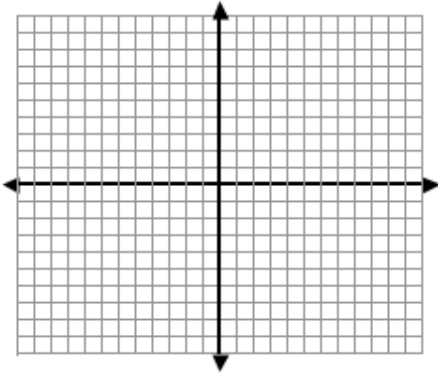
   through the point (8, -5)
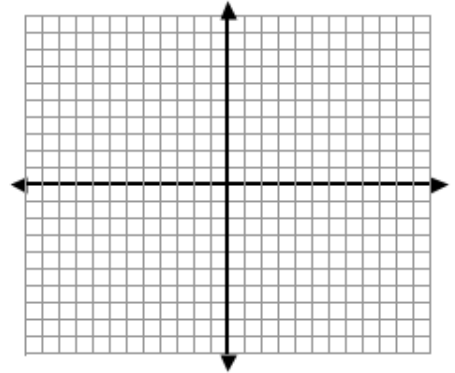
   PARALLEL   PERPINDICULAR
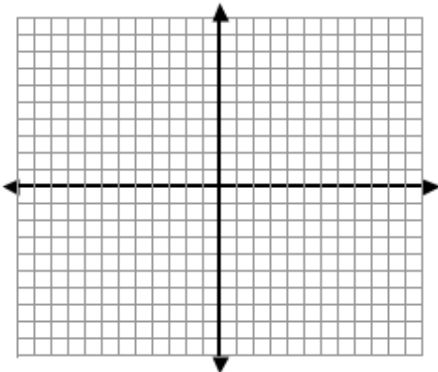
Graph the given the equation/inequality.
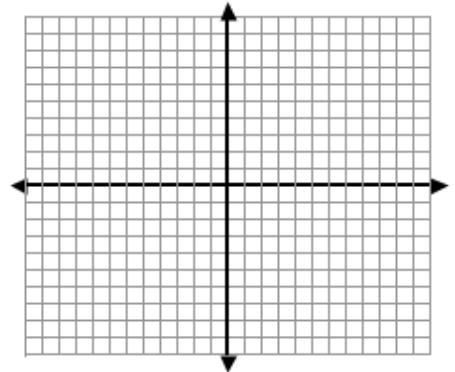
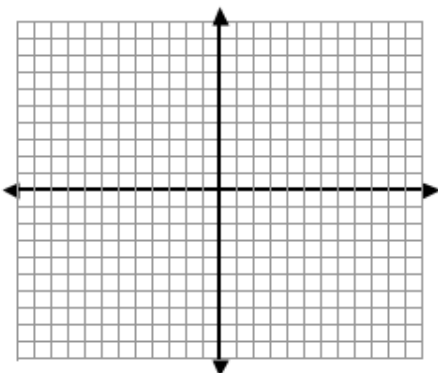**6**. $3x - 6y = 18$

7. $y > -\dfrac{1}{4}x + 4$
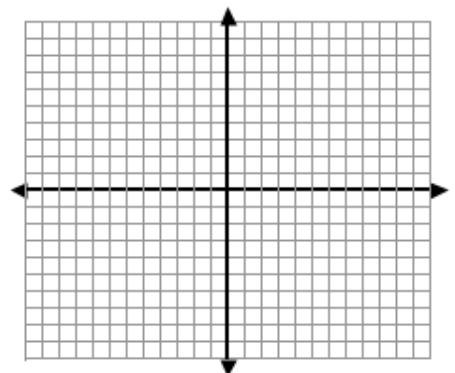
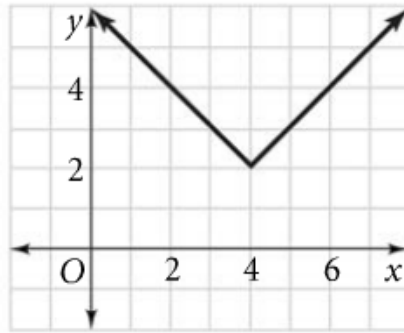**8.** $y = -|x + 3| + 4$

9. $y > -6$

10. $5x - 3y \geq 15$

11. $y < \dfrac{1}{3}|x + 2| - 6$

12. Using the parent graph of $y = |x|$ as your base…what is the equation for the
  following graph.

Evaluate the function if $f(x) = 3 - 5x$ and $g(x) = \dfrac{x^2 + 5}{x}$

    13 . $f(4)$ **14.** $g(-5) - f(3)$

15. Alexandra has a college savings account. After 3 years she has $2569 in the account.
After 10 years she has $7630.

  a) Write a linear equation in slope-intercept form for the amount of money saved (y)
  after (t) years. (Hint…find the slope first!)

  b) How much money will Alexandra have after 18 years?

16. Larry is going on a backpacking trip and will need to carry enough water for the duration of the trip. He figures he will need at least 180 oz. of water total. A small bottle holds 12 oz. of water, while a large bottle holds 20 oz. of water.

a. Write an inequality relating the number of small bottles (x) and the number of large bottles (y) needed to meet his water needs.

b. Graph the inequality...don't forget to label your axes.
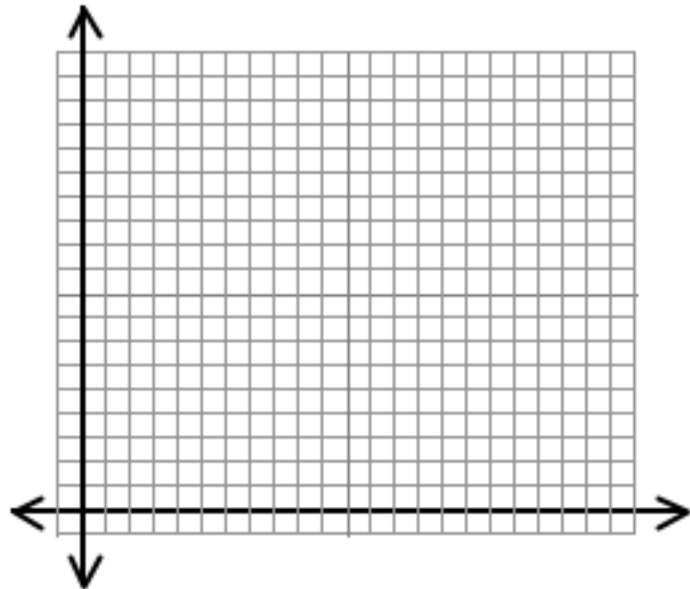
c. Use the graph to answer the question. If Larry only has 4 large water bottles, what is the minimum number of small water bottles he will need to carry.