Adv Algebra   Name _____
Cumulative Review 1-3   Block _____

1-1 through 1-2 Introduce Real Numbers and Expressions

1. Evaluate: $-k^2 - (3k - 5n) + 4n$ for k = -1 and n = -2

2. Simplify: $7 - 4(x + y) + 2(x - 3y) + 3x(x + 5) - x^2$

1-3 through 1-5 Solving Equation and Inequalities
For 3-4, **Solve** and **graph** on a number line.

3. $4|2x + 3| - 7 < 9$

⟵————————————————⟶

4. $4w - 2(1 - w) = -38$

⟵————————————————⟶

1-3 through 1-5 Apply Equation and Inequalities

5. A school fundraiser is hosting a pie-eating contest. The school will receive $700 for hosting, plus 2% of the ticket sales. How many tickets must be sold to make at least $1800 total profit? Write an inequality and solve.

6. Solve for h.   S=2B + Ph

2-1 Represent Functions
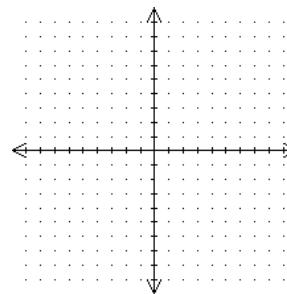7. Is the letter "S" a function? How can you tell by looking at the graph? What "test" can you use?

8. Is this table a function?   How can you tell by looking at the table?

X	Y
-5	10
3	28
6	36
2	25
3	16

9. If $f(x) = 5x - 2$ and $g(x) = -x^2 + 6$, find $f(3) + g(2)$.

2-2 through 2-4 Investigate Linear Equations and their Applications

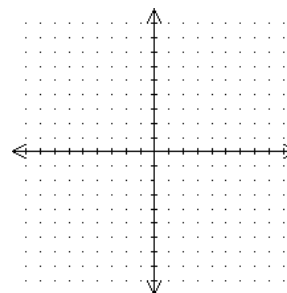10. Graph $y = -\dfrac{3}{2}x + 4$. Find the slope, x-intercept, and y-intercept.

slope: _____

x-intercept: _____

y-intercept: _____

11. Graph -5x + 10y = -20. Find the slope, x-intercept, and y-intercept.

slope: _____

x-intercept: _____

y-intercept: _____

Recall:
slope: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$

slope-intercept form: y = mx + b

point-slope form: $y - y_1 = m(x - x_1)$

standard form: Ax + By = C   , where A,B, and C are **integers** and A must be **positive**.

12. Write $y = 3x - 4$ in standard form.

13. Write $y = -\frac{1}{3}x + 2$ in standard form.

14. Write the equation of a line that is **parallel** to $y = 3x + 7$ and passes through (-2 , 4).

point-slope form: _____

slope-intercept form: _____

standard form: _____

15. Write the equation of a line that is **perpendicular** to $y = -4x + 3$ and passes through (8 , -5).

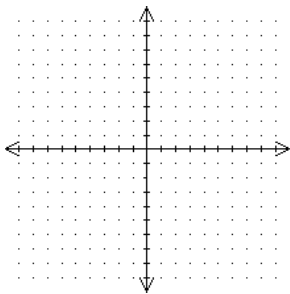point-slope form: _____

slope-intercept form: _____

standard form: _____

16. A family built a house in a beach resort area. In 1990, the house was 430ft. from the water. With erosion, the house was 400ft. from the water in 2000.
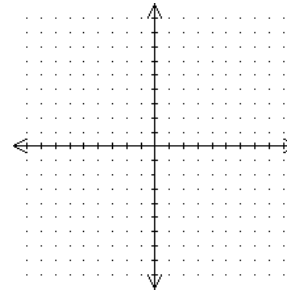
    a. Assuming a linear relationship, write an equation for y as a function of x.

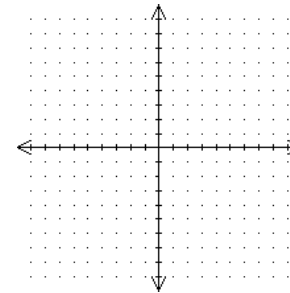   b. In what year will the house be only 250ft. from the water?

17. Graph $y = 3|x - 2| + 1$

18. Graph $y > -2x + 1$

19. Graph the system of inequalities: $\begin{cases} y > 3x - 2 \\ y < -2|x+1| + 3 \end{cases}$

Review how to solve a system by **graphing**, **substitution**, and **elimination**. Since we just tested over it, there aren't any problems like it on this review.

20. A bookstore sold 5 copies of a new Cookbook and 3 copies of a new Novel and made a profit of $167. The next day, the store sold 3 copies of the Cookbook and 1 copy of the Novel and made a profit of $89. What was the price of each book?