

$(2x^2 - 5x + 7) - (6x + 4x^2 - 3)$

a. $8x^2 - x + 4$

b. $-2x^2 - 11x + 10$

c. $-4x^2 - 9x + 10$

d. $6x^2 + x + 4$

2. Solve the system $3x - 3y = 3$
 $-2x - y = -5$

$(2, 1)$

3. The length of a rectangular garden is three feet longer than the width, w . Farmer Chuck will increase both the length and the width of his garden this year by 7 feet. Which equation represents the new area, A , of his garden?

a. $A = w^2 + 17w + 17$

c. $A = 4w^2 + 17w + 34$

b. $A = 4w + 34$

d. $A = w^2 + 17w + 70$

4. A canon shoots a canon ball with an upward initial velocity of 240 ft/sec. If the canon ball starts with an initial height of 1 foot, after how many second will the canon ball reach the ground?

a. 15 sec

b. 16 sec

c. 17 sec

d. 17 sec

5. Monica did an experiment to compare two methods of warming an object. The results are shown in the table below. Which statement best describes her results?

Time (hours)	Method 1 Temperature	Method 2 Temperature
0	0	1.5
1	5	3
2	11	6
3	15	12
4	19	24
5	25	48

a. The temperature using both methods changed at a constant rate.

b. The temperature using both methods changed exponentially.

c. The temperature using Method 2 changed at a constant rate.

d. The temperature using Method 2 changed exponentially.

6. Which of the following tables best represents a linear model?

a.

x	y
1	5
2	1
0	8
-3	20

b.

x	y
5	5
8	10
11	12
14	18

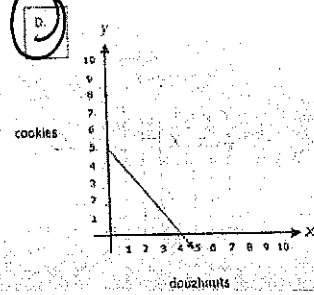
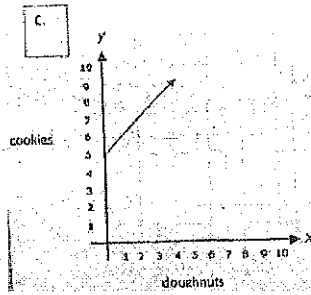
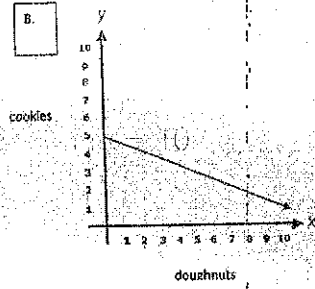
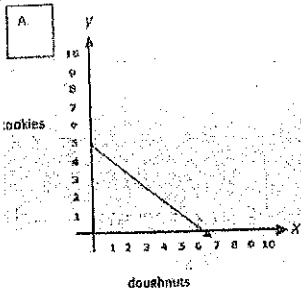
c.

x	y
2	4
6	9
8	12

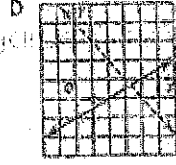
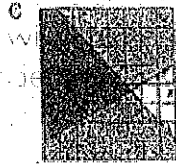
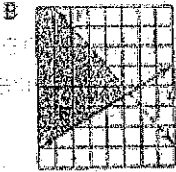
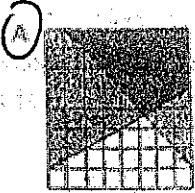
d.

x	y
3	6
4	-4
5	-14
6	-24

7. Sarah bought 5 doughnuts and 4 cookies for a total of \$20. If x represents doughnuts and y represents cookies, which of the following gives a graph of the function?



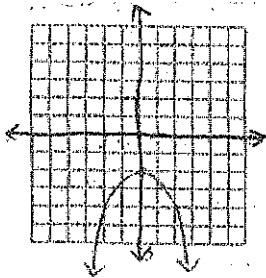
8. Which is the graph of the solution of $\begin{cases} x - 2y \leq 4 \\ x + y > 3 \end{cases}$?



9. The vertices of quadrilateral ABCD are A(0, -5), B(2, 1), C(9, 1), and D(13, -5). What kind of quadrilateral is ABCD?

- a. Trapezoid
 b. Rectangle that is not a square
 c. Rhombus that is not a square
 d. Square

10. The following graph shown shows which of the following functions?



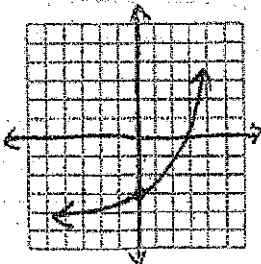
- a. $-x^2 - 2$
 b. $-x^2 + 2$
 c. $(x + 2)(x - 2)$
 d. $(x + 4)(x - 4)$

11. What is the difference in the y-intercepts of the graphs of the following functions?

$f(x) = 7x + 3$ and $g(x) = x^2 + 7x + 9$

6

12. The function $f(x) = 2^x$ was replaced with $f(x) + k$, resulting in the function seen on the graph below. What is the value of k ?



-4

13. $4x - 3y = -23$
 $x + 7y = 2$

$(-5, 1)$

14. A biologist is studying the relationship between a tree's diameter and its height. She records the following data for 7 different trees:

Diameter (in)	Height (ft)
2	8
3	10
4	16
5	17
6	22
7	20
8	29

What is the equation of the line of best fit?

- a. $y = 3.18x + 1.54$ b. $y = 1.54x + 3.18$ c. $y = -3.18x + 1.54$ d. $y = -1.54x + 3.18$

15. What is the slope of the graph of the equation $10x + 4y = 20$?

a. -5

b. $(-5)/2$

c. $5/2$

d. 5

16. Suppose that the function $f(x) = 2x + 12$ represents the cost to rent x movies a month from an internet movie club. Makayla now has \$10. How many more dollars does Makayla need to rent 7 movies next month?

$\$16$

17. $(3x^2 + 2x - 10) - (4x^2 - 3x + 6) = -1x^2 + 5x - 16$

18. Internet Company A charges \$10 a month plus \$0.01 per minute, m . Internet Company B charges \$0.05 per minute, but does not charge a start-up fee like Company A does. Which function represents the difference in cost between Company A and Company B?

a. $C(m) = 10m - 0.04$

b. $C(m) = 10m + 0.04$

c. $C(m) = 10.04m$

d. $C(m) = -0.04m + 10$

19. What is the slope of a line perpendicular to the line that passes through $(-7, 2)$ and $(-2, 0)$?

a. $-5/2$

b. $-2/5$

c. $2/5$

d. $5/2$

20. A rectangular garden measured 4 feet wide and 6 feet long. Each dimension is increased by x feet. Which equation represent the new area, A , of the garden?

a. $A = 2x + 10$

b. $A = x^2 + 10$

c. $A = x^2 + 24$

d. $A = x^2 + 10x + 24$

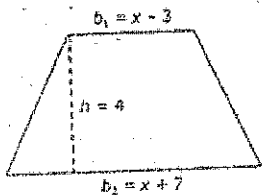
21. The following data are prices for ugly Christmas sweaters.

97 85 68 125 45 100 60 125 76 130 125 85 75

Find the following information:

a. Mean: **92** b. Median: **85** c. Mode: **125** d. Range: **85** e. IQR: **53.5**

22. The area of a trapezoid is found using the formula $A = \frac{1}{2} h(b_1 + b_2)$, where A is the area, h is the height, and b_1 and b_2 are the lengths of the bases. What is the area of the trapezoid?



a. $A = 4x + 2$

b. $A = 2x^2 + 8x - 42$

c. $A = 4x + 8$

d. $A = 2x^2 + 4x - 21$