

### Algebra 1 Final Assessment REVIEW

#### Multiple Choice

Identify the choice that best completes the statement or answers the question.

B

1. What is the value of the expression below?

$$\frac{15(4+8)}{2(2+1)-1} = \frac{15(12)}{2(3)-1} = \frac{180}{6-1} = \frac{180}{5} = 36$$

- a. 17  
 b. 36  
 c. 45  
 d. 60

B

2. Shirley bought a newspaper every day for 40 weeks.

\*Monday through Saturday, she paid \$0.35 each day for her newspaper.  
 \*Each Sunday, she paid \$1.00 for her newspaper.

What total amount of money did Shirley pay for her newspapers during the 40-week period?

- a. \$42.10  
 b. \$124.00  
 c. \$242.10  
 d. \$324.00

C

3. At a fish market, Mr. Estes bought several pounds of cod that was on sale for \$3.59 per pound. The total cost of the cod that he bought was \$28.63. Which of the following is closest to the amount of cod that Mr. Estes bought?

- a. 6 pounds  
 b. 7 pounds  
 c. 8 pounds  
 d. 9 pounds

D

4. Which is equivalent to the expression below?

$$2x - 3(5x - 8) = 2x - 15x + 24 = -13x + 24$$

a.  $-13x + 8$   
 b.  $-13x - 24$   
 d.  $-13x + 24$   
 c.  $-13x - 8$

D

5. When Mr. Lee purchased his car, it had a value of \$15,000. In each of the first 2 years after he purchased it, its value decreased by 10% of the previous year's value, as shown in the table below.

Decrease in Value of Mr. Lee's Car

Number of Years After Purchase	Value of Car
0	\$15,000
1	\$13,500
2	\$12,150
3	?

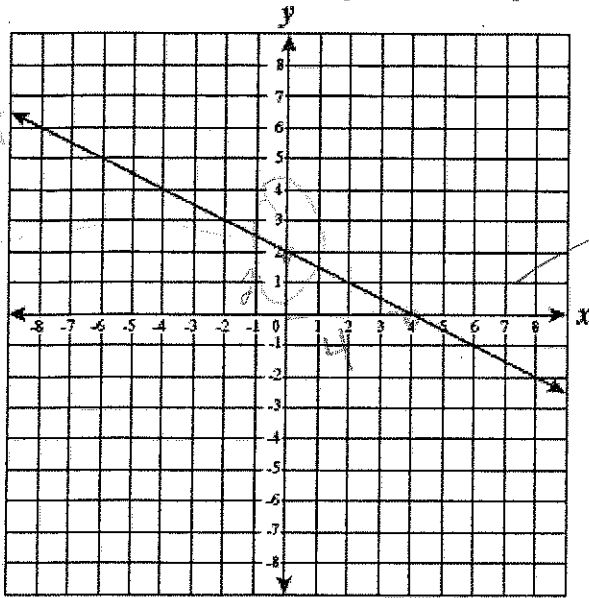
$$\begin{array}{r} 12,150 \\ \times 0.10 \\ \hline 1,215 \end{array}$$

$$\begin{array}{r} 12,150 \\ - 1,215 \\ \hline 10,935 \end{array}$$

If the value of Mr. Lee's car continues to decrease each year by 10% of the previous year's value, what will be the value of his car 3 years after he purchased it?

- a. \$1,215  
 b. \$4,500  
 d. \$10,935  
 c. \$10,500

- A 6. Which of the following best represents the equation of the line shown on the graph below?



y-intercept  
(b)

negative slope

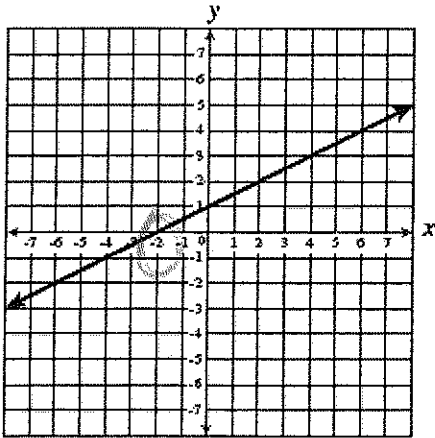
$$y = mx + b$$

$$\frac{2}{4} = \frac{1}{2}$$

$$m = -\frac{1}{2}$$

- a.  $y = -\frac{1}{2}x + 2$       c.  $y = -\frac{1}{2}x + 4$   
 b.  $y = -2x + 2$       d.  $y = -2x + 4$

- D 7. What is the x-intercept of the line graphed below?



- a. 2      c. -1  
 b. 1      d. -2

- B 8. Which of the following expressions is equivalent to the one shown below?

$$(b^3 + 5b^2 - 2b) - (b^3 + b - 1)$$

- a.  $5b^2 - b$   
 b.  $5b^2 - 3b + 1$

- c.  $4b^2 - b$   
 d.  $5b^2 - 3b - 1$

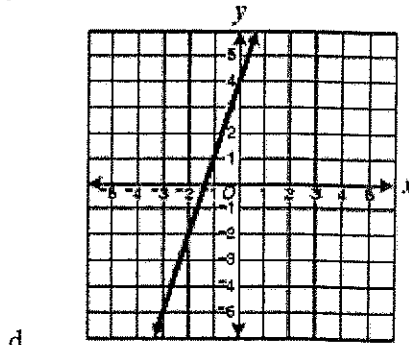
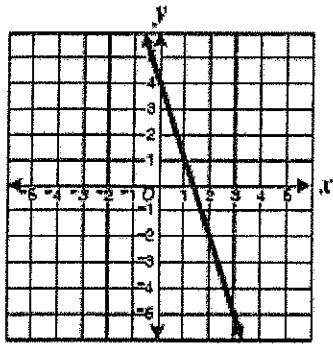
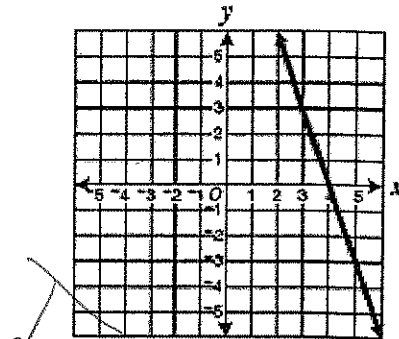
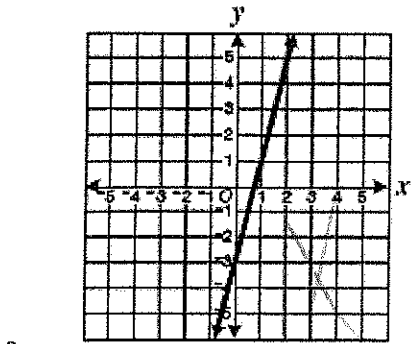
$$\begin{array}{r} b^3 + 5b^2 - 2b \\ + \quad -b^3 \quad -b + 1 \\ \hline 5b^2 - 3b + 1 \end{array}$$







B 17. Which graph best represents a line with a y-intercept of 4 and slope -3?



D 18. Simplify  $\frac{24y^2z^3}{6z}$ , where  $z \neq 0$ .  
 $31=2$        $4y^2z^2$

- a.  $18y^2z^2$
- b.  $16y^2z^2$
- c.  $4yz^3$
- d.  $4y^2z^2$

A 19. What is the value of  $a(3-b)$  if  $a=2$  and  $b=5$ ?  
 $2(3-5)$   
 $2(-2)$   
 $-4$

- a. -4
- b. 0
- c. 5
- d. 16

D 20. The function below contains ordered pairs in the form of  $(x,y)$ .

$$f = \{(6,5), (2,3), (1,4)\}$$

What is the range of the function?

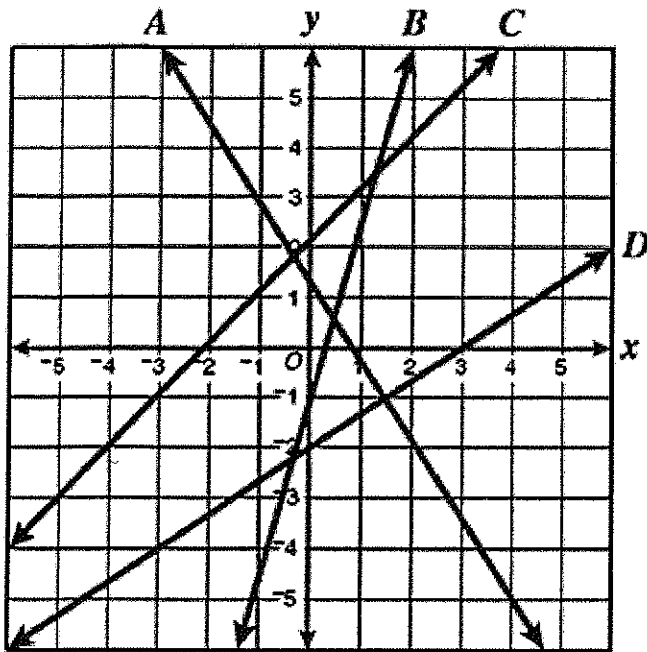
- a.  $\{4\}$
- b.  $\{1,2,3,4,5,6\}$
- c.  $\{1,2,6\}$
- d.  $\{3,4,5\}$

B 21. If  $f(x) = \frac{3-x^2}{3-x}$ , what is  $f(2)$ ?

- a. -2
- b. -1
- c. 1
- d. 2

$$\frac{3-2^2}{3-2} = \frac{3-4}{1} = \frac{-1}{1}$$

A 22. Which line on the graph below has a negative slope?



- a. A
- b. B
- c. C
- d. D

B 23. Which equation fits the data in the table below?

x	-1	0	1	2
y	-3	-1	1	3

$\frac{\Delta y}{\Delta x} = \frac{3}{1} = 3$   
 $2(-1) - 1 = -2 - 1 = -3$

- a.  $y = x - 2$
- b.  $y = 2x - 1$
- c.  $y = 3x - 3$
- d.  $y = x + 1$

D 24. Which is equivalent to  $(-2ab^3)(-3a^2b^5)$ ?

$6a^3b^8$

- a.  $-5ab$
- b.  $6a^2b^{15}$
- c.  $6a^3b^2$
- d.  $6a^3b^8$

A 25. If  $f(x) = -2x^2 + x - 5$ , what is  $f(3)$ ?

$-2(3^2) + 3 - 5 = -12 + 3 - 5 = -14$

- a. -20
- b. -14
- c. 16
- d. 34

A 26. What is the range of the function  $f(x) = (x - 1)^2$  when the domain is  $\{-5, 0, 5\}$ ?

$-18 + 3 - 5 = -20$

- a.  $\{1, 16, 36\}$
- b.  $\{1, 24\}$
- c.  $\{1, 26\}$
- d.  $\{-12, -2, 8\}$

$(-5-1)^2 = 36$   
 $(0-1)^2 = 1$   
 $(5-1)^2 = 16$

B 27. Suppose you choose 2 tiles from a bag containing 2 A's, 3 B's, and 4 C's. What is the probability that you will choose a 'B' tile then a 'C' tile, without replacing the first tile?

a.  $\frac{4}{27}$

c.  $\frac{1}{3}$

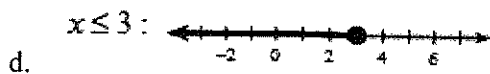
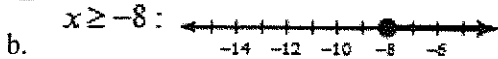
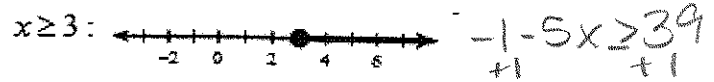
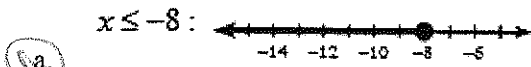
b.  $\frac{1}{6}$

d.  $\frac{7}{9}$

$\frac{3}{9} \cdot \frac{4}{8}$

$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$

A 28. Solve the inequality  $-1 - 5x \geq 39$ .



$-1 - 5x \geq 39$   
+1 +1

$-5x \geq 40$   
 $\frac{-5x}{-5} \geq \frac{40}{-5}$

$x \leq -8$

\* divide by a negative (flip)

**Short Answer**

29. What is the solution to the following system of equations?

$$\begin{cases} -x + 3y = -5 \\ 4x + 2y = -8 \end{cases}$$

$(-1, -2)$

$-4(-x + 3y = -5)$   
 $4x + 2y = -8$

$4x - 12y = 20$   
 $4x + 2y = -8$

30. What is the solution to the following system of equations?

$$\begin{cases} y = -4x + 19 \\ 6x + 8y = 22 \end{cases}$$

$(5, -1)$

$6x + 8(-4x + 19) = 22$   
 $6x - 32x + 152 = 22$   
 $-26x + 152 = 22$   
 $-26x = -130$   
 $x = 5$

$-14y = 28$   
 $\frac{-14y}{-14} = \frac{28}{-14}$   
 $y = -2$

$y = -4(5) + 19$   
 $y = -20 + 19$   
 $y = -1$

31. Factor the greatest common factor from the following expression.

$18x^3y^2 + 36x^2y$

$18x^2y(xy + 2)$

32. Factor the greatest common factor from the following expression.

$10x^5y - 15x^3y^2 + 20x^2y^3$

$5x^2y(2x^3 - 3xy + 4y^2)$

33. A canary's heart beats 200 times in 12 seconds. Use a proportion to find how many times its heart beats in 42 seconds.

700 times

$\frac{HB}{Sec} = \frac{200}{12} = \frac{x}{42}$

$\frac{8400}{12} = \frac{12x}{12}$

$x = 700$

34. What is the slope of the line defined by the equation  $3x + 6y = 30$ ?

$m = -\frac{1}{2}$

35. Which of the following are irrational numbers?

$0.\overline{42}, \sqrt{16}, -8, \pi, \frac{1}{7}, \sqrt{2}$

non terminating decimal cannot be a fraction

$3x + 6y = 30$   
 $-3x$

$2x \overline{) 18x^3y^2 + 36x^2y}$   
 $9x \overline{) 9x^2y^2 + 18xy}$   
 $y \overline{) xy^2 + 2y}$   
 $xy + 2$

$5xy \overline{) 10x^5y - 15x^3y^2 + 20x^2y^3}$   
 $x \overline{) 2x^4 - 3x^2y + 4xy^2}$   
 $2x^3 - 3xy + 4y^2$

$y = -\frac{1}{2}x + 5$

$2x \cdot 9x \cdot y (xy + 2)$   
 $18x^2y(xy + 2)$

$5xy \cdot x (2x^3 - 3xy + 4y^2)$   
 $5x^2y(2x^3 - 3xy + 4y^2)$