

Name: _____
Date: _____
Class: _____

Algebra
Review
Final Review 1

1) When $3(2x-5)$ is added to $2(4-x)$ the result is

(1) $8x+2$

(3) $4x-7$

(2) $5x+3$

(4) $2x-11$

2) Which of the following is equivalent to $(x+5)^2$?

(1) $x^2+10x+25$

(3) $2x+25$

(2) x^2+25

(4) $2x+10$

3) If the expression $(2x^3)^2(-5x^4)$ was placed in the form ax^b , where a and b are integers, then what is the value of $a+b$? Show the work that leads to your answer.

4) Rewrite the expression below as an equivalent product of two binomials.

$$(x-8)(4x+5)-(x-8)(2x-4)$$

5) The value $x=4$ is a solution to all of the following equations except which?

(1) $2x+7=15$

(3) $x+5=3x-3$

(2) $3(x+1)=x+11$

(4) $x+12=5x-2$

6) The inequality $2x+1 > 15$ will be true when

(1) $x = 7$

(3) $x = 10$

(2) $x = 0$

(4) $x = 5$

7) If the expression $\frac{2x}{a} + b = c$ is solved for x in terms of a , b , and c , then $x =$

(1) $\frac{ac - ab}{2}$

(3) $\frac{ac - b}{2}$

(2) $\frac{b + c}{2a}$

(4) $\frac{ab + c}{2}$

8) Jody's older brother is only three years less than twice Jody's age. If the sum of their ages is 30, then which of the following is the age of Jody's brother?

(1) 7

(3) 19

(2) 11

(4) 23

9) A rectangular garden has a length that is six feet more than twice its width. It takes 120 feet of fencing to completely enclose the garden's area.

Write an equation that could be used to find the width of the garden. Clearly define your variable.

Explain how your equation models the given information.

Find the length of the garden algebraically. Show how you arrived at your answer.

10)

Two consecutive even integers have the following property. When the smaller integer is added to three times the larger integer, the result is two less than five times the smaller integer.

Rafael tries to model this scenario with the equation show below. Unfortunately, Rafael has made an error on the left side of the equation. Explain what error he made.

$$n + 3n + 2 = 5n - 2$$

Write the correct equation (if you haven't already) and solve it to find the two consecutive even integers.

11)

Water is being drained out of a swimming pool at a constant rate of 780 gallons per hour. The swimming pool initially contained 45,000 gallons of water. A chemical additive must be added to the pool when it has no more than 15,000 gallons of water remaining in the pool.

Write an expression for the amount of water remaining in the pool after h -hours.

Write an equation that could be solved to find the least number of hours before the chemical could be added.

Will it take longer than two days before the chemical can be added? Justify your response.

12) If $f(x) = -2x^2 + 3$ then $f(-3) =$

(1) -15

(3) 39

(2) 21

(4) -18

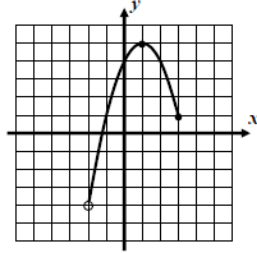
13)

Jenna is selling glasses of lemonade for \$1.50 per cup. She begins the day with \$4.50 in change. The amount of money, m , she has as a function of the number of cups she sells is $m = 1.50c + 4.50$. Which of the following would be an appropriate domain for this function?

- (1) $\{-3, -2, -1, 0, 1, 2, 3\}$
- (2) $\{1, 1.5, 2, 2.5, 3, 3.5\}$
- (3) $\{0, 1, 2, 3, 4, 5, 6\}$
- (4) $\{4.50, 6.00, 7.50, 9.00, 10.50\}$

14) Which of the following represents the range of the function shown in the graph below?

- (1) $(-4, 5]$
- (2) $[-4, 5)$
- (3) $[-2, 3)$
- (4) $(-2, 3]$



15) For the function $f(x)$ shown below, which of the following represents the interval over which $f(x) < 0$?

- (1) $-2 < x < 4$
- (2) $-2 \leq x \leq 4$
- (3) $-4 < x < 0$
- (4) $-4 \leq x \leq 0$

