



Full Length EOC Review (Alg. 1)

Student Name: _____

Date: _____

Teacher Name: Robert Beach

Score: _____

1) The Dudley family just brought home twins from the hospital. Their neighbor's baby was born on the same day as the twins. A reasonable conclusion is that the Dudley family will spend more money on diapers. Is this association positive, negative, or neither? Is the relationship more likely a causation or correlation?

- A) neither
- B) positive; causation
- C) negative; correlation
- D) positive; correlation

2) Sharon is making 100 liters of punch for a party. The punch contains ginger ale (g) and fruit juice (f). The cost of the ginger ale is \$1 per liter and the fruit juice is \$1.50 per liter. If Sharon spent a total of \$130, how many liters of each did she put in the punch?

Which system of equations matches the situation?

A)
$$\begin{cases} g + f = 130 \\ g + 1.5f = 100 \end{cases}$$

B)
$$\begin{cases} g + f = 100 \\ 1.5g + f = 130 \end{cases}$$

C)
$$\begin{cases} g + f = 100 \\ g + 1.5f = 130 \end{cases}$$

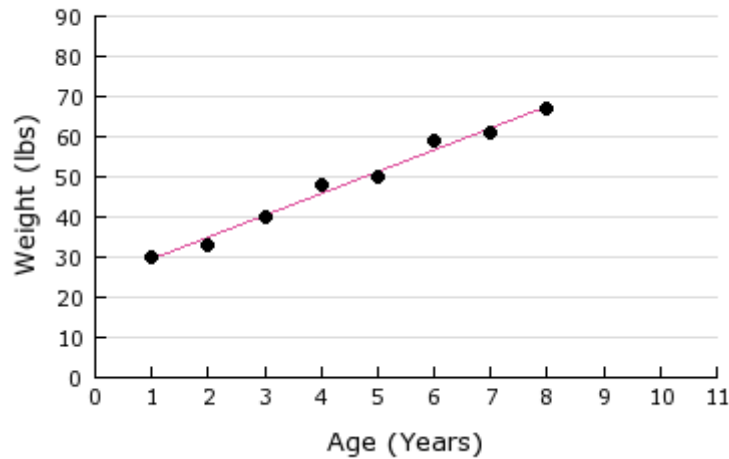
D)
$$\begin{cases} g + f = 230 \\ g + 1.5f = 100 \end{cases}$$

3) If $y = 2x - 8$, what is the value of x when $y = 0$?

- A) -4
- B) 0
- C) 4
- D) 8

4)

Weight and Age



The graph shows Jessica's weight as it compares to her age.

Using the line of best fit what is the best approximation for Jessica's weight at age 10?

- A) 60 pounds
- B) 70 pounds
- C) 80 pounds
- D) 90 pounds

5) Factor to find the zeros of the function defined by the quadratic expression.

$$9x^2 - 63x - 702$$

- A) $x = 6$ or $x = 13$
- B) $x = 6$ or $x = -13$
- C) $x = -6$ or $x = 13$
- D) $x = -6$ or $x = -13$

6) What are the x-intercepts of $y = 2x^2 - 3x - 20$?

- A) $x = -5$ and 2
- B) $x = 5$ and -2
- C) $x = -2.5$ and 4
- D) $x = 2.5$ and -4

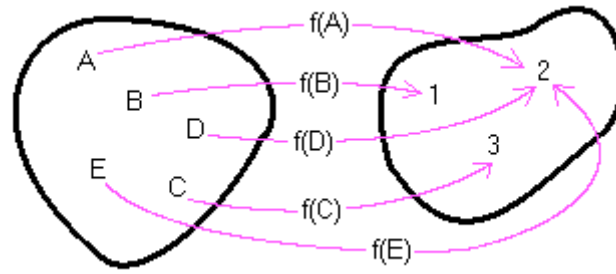
7)

$$f(x) = -3x^2 + 2x - 7$$

$$f(-1) =$$

- A) -12
- B) -8
- C) -6
- D) 0

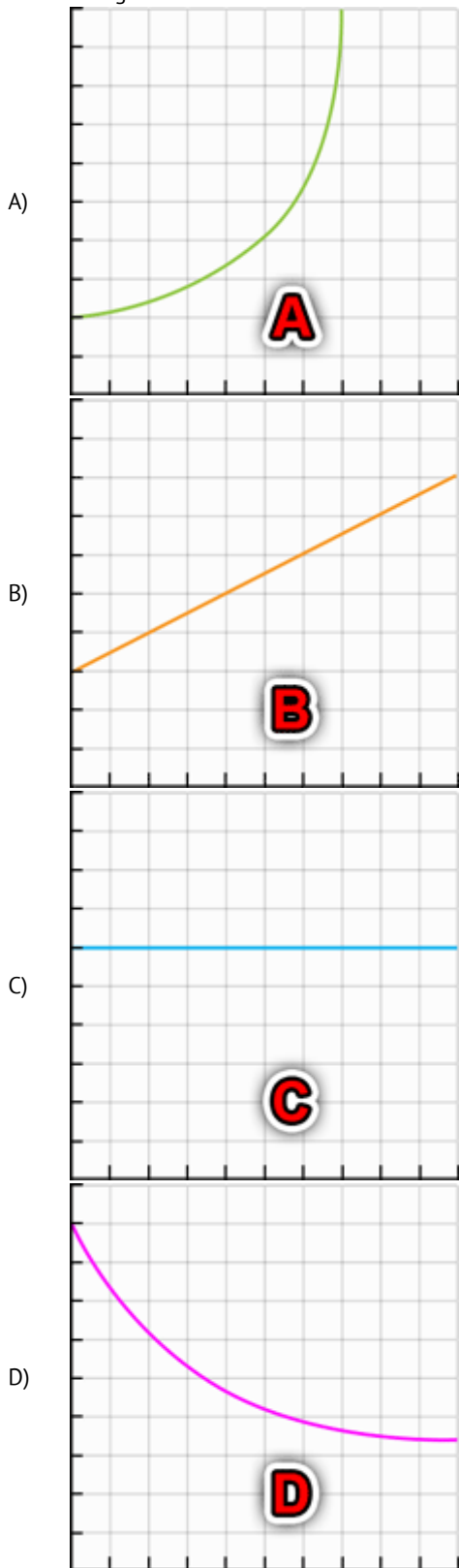
8)



The RANGE of the function f is

- A) $[1, 3]$
- B) $\{1, 2, 3\}$
- C) $\{A, B, C, D, E\}$
- D) $\{(A, 2), (B, 1), (C, 3), (D, 2), (E, 2)\}$

9) You are going to model the population size of a species of bird that is gradually becoming extinct. Which graph is the BEST choice for doing this?

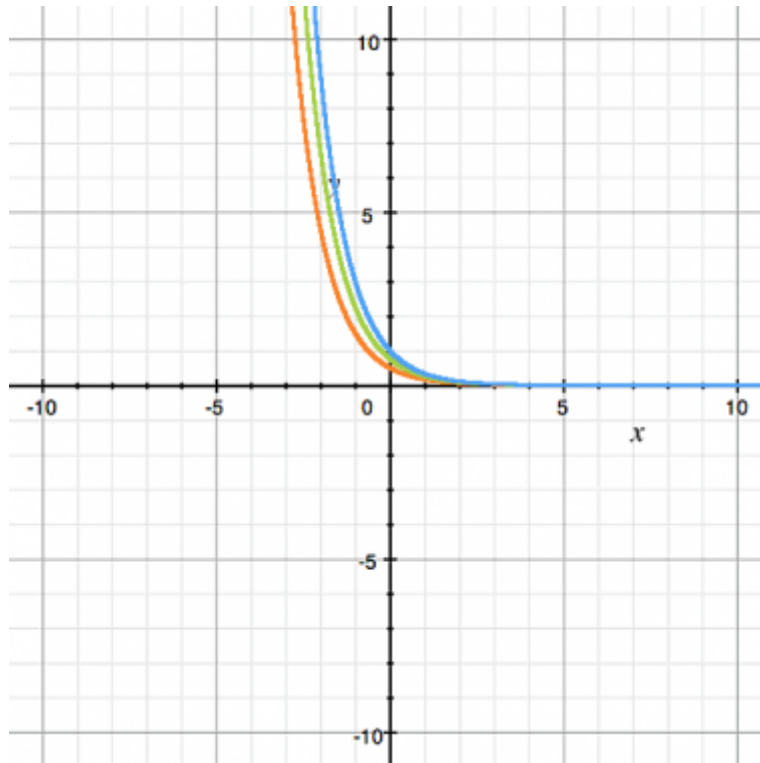


10) Solve for x.

$$\frac{2}{3}(x + 7) = 10$$

- A) 22
- B) 8
- C) $-\frac{1}{3}$
- D) $\frac{41}{3}$

11)



The graph shows the first quadrant portion of four exponential functions. Which equation could generate the GREEN curve?

- A) $y = (0.75)^{-x}$
- B) $y = 3(0.75)^{-x}$
- C) $y = (0.75)3^{-x}$
- D) $y = 3^{-x} + 0.75$

12) Factor.

$$16x^2 + 40x + 25$$

- A) $(4x - 5)(4x + 5)$
- B) $(4x - 5)(4x - 5)$
- C) $(4x + 5)(4x + 5)$
- D) $(5x + 4)(5x - 4)$

13) Solve the quadratic equation.

$$(x - 4)^2 = 36$$

- A) $x = 2$ or -10
- B) $x = 10$ or -2
- C) $x = \pm 4$
- D) $x = \pm 10$

14) What is the value of x when $-3x + 7x = -12$?

- A) -3
- B) $-\frac{6}{5}$
- C) 3
- D) $\frac{4}{7}$

15) Solve the quadratic equation by completing the square.

$$x^2 + 4x - 3 = 0$$

- A) $x = 4 \pm \sqrt{7}$
- B) $x = 2 \pm \sqrt{7}$
- C) $x = -4 \pm \sqrt{7}$
- D) $x = -2 \pm \sqrt{7}$

16) Which table shows a decreasing linear relationship?

A)

x	y
4	55
7	60
10	65
13	70

B)

x	y
4	55
7	55
10	55
13	55

C)

x	y
14	55
18	50
22	45
26	40

D)

x	y
14	2
18	8
22	14
26	20

17)

	Boy	Girl
Dog	27	18
Cat	15	25
Other	10	12

Dr. Mitchell, an animal veterinarian, collected data during animal examinations on the kind of animal a boy or girl has as a pet. Based on the data collected, which statement is true?

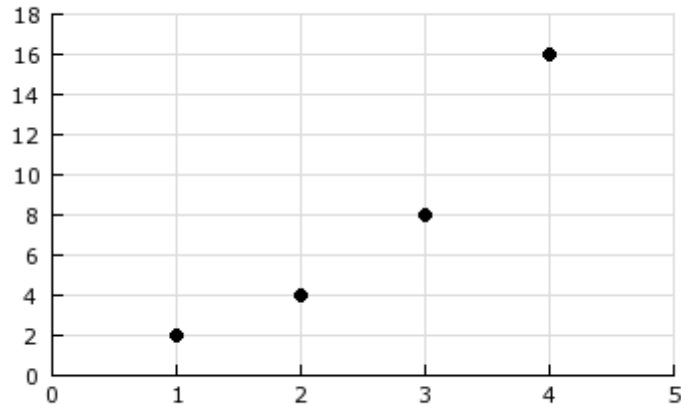
- A) A girl is 17% more likely than a boy to own a cat than a dog or other animal.
- B) A girl is 45% more likely than a boy to own a cat than a dog or other animal.
- C) A girl is 29% more likely than a boy to own a cat than a dog or other animal.
- D) A girl is 67% more likely than a boy to own a cat than a dog or other animal.

18) Simplify.

$$\sqrt{25ab^6}$$

- A) $5ab^3$
- B) $5b^3\sqrt{a}$
- C) $5b^2\sqrt{a}$
- D) $25b^3\sqrt{a}$

19)



Which geometric sequence matches the graph?

- A) 1, 2, 3, 4, ...
- B) 2, 4, 6, 8, ...
- C) 2, 4, 8, 16, ...
- D) 16, 4, 1, $\frac{1}{4}$, ...

20)

Days	People
1	26
2	30
3	34
4	38
5	42
6	46

The chart shows how many people have signed up to go on a field trip each day. 62 students are allowed to go on the field trip. On which day would you expect that number to be reached?

- A) 8
- B) 9
- C) 10
- D) 11

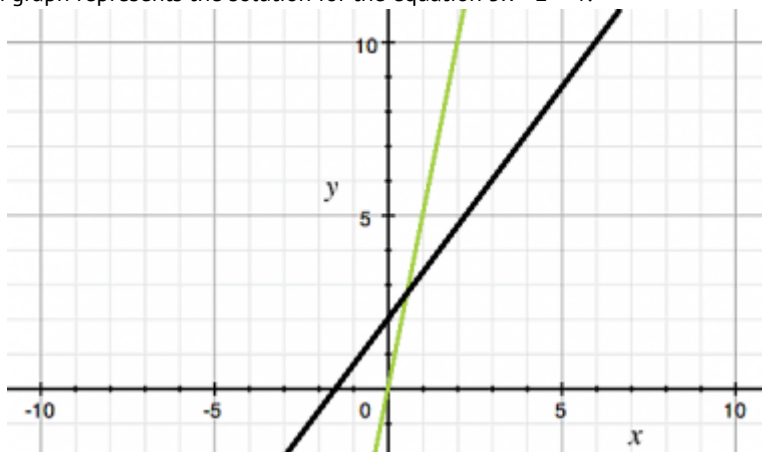
21) When Danielle goes grocery shopping, she usually buys a gallon of milk and some dinner rolls. She has noticed that there seems to be a correlation between the price of milk and dinner rolls. In other words, when the price of milk goes up, the price of dinner rolls goes up, and when the price of milk goes down, the price of dinner rolls goes down.

Which fact would lead you to believe that the relationship between the prices is not only a correlation, but also one of causation?

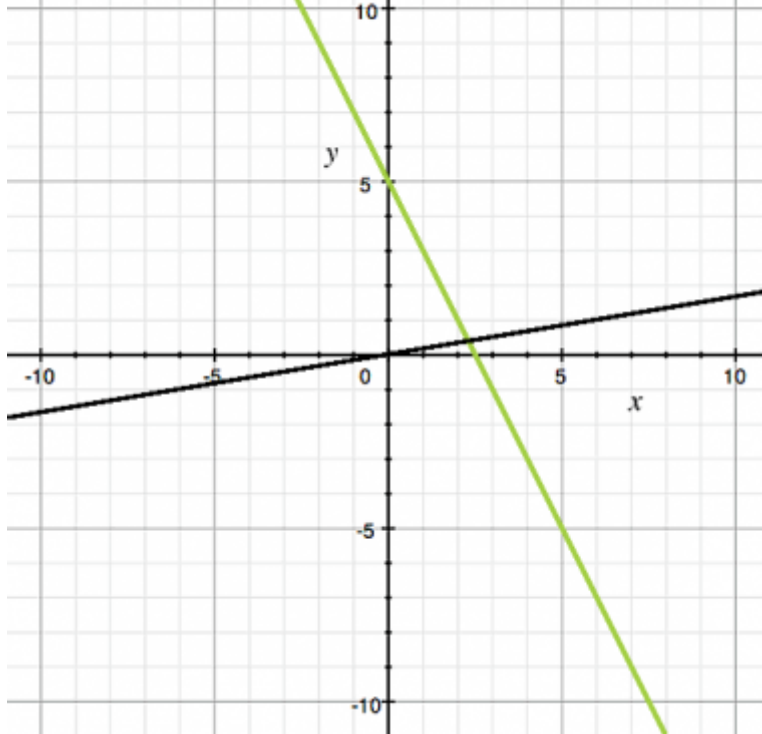
- A) Whenever milk is on sale, dinner rolls are also on sale.
- B) Milk and dinner rolls are often served during the same meal.
- C) Milk is one of the major ingredients used to make dinner rolls.
- D) The prices of milk and dinner rolls both move with the rate of inflation.

22) Which graph represents the solution for the equation $5x - 2 = 4$?

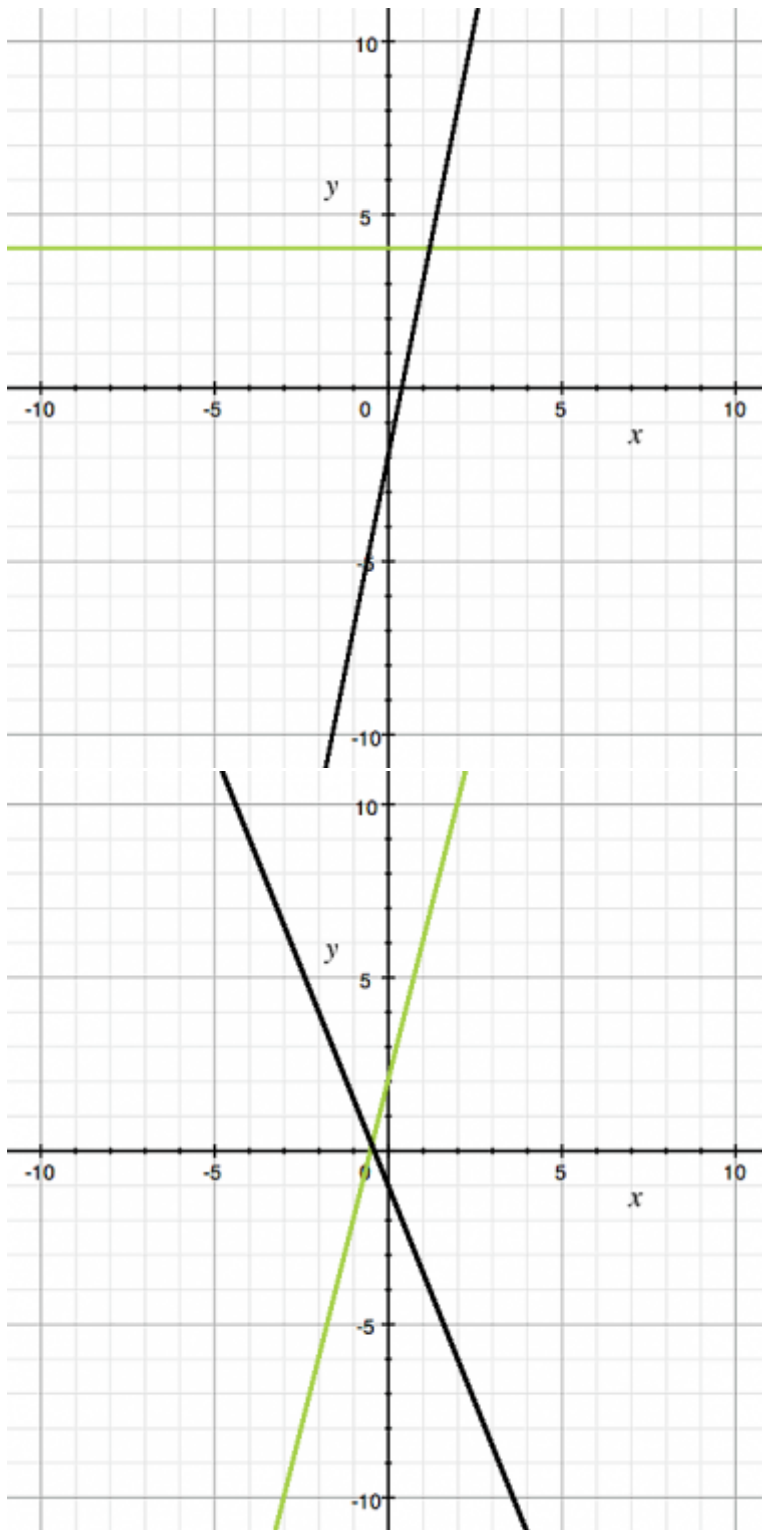
A)



B)



C)



D)

- 23) The height of an ostrich is 20 inches more than 4 times the height of a kiwi. If an ostrich is 108 inches tall, how tall is a kiwi?
- A) 22 inches
 - B) 27 inches
 - C) 44 inches
 - D) 66 inches

24)

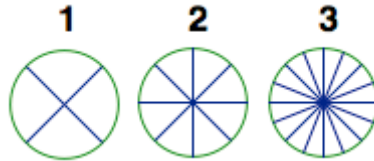
Number of Students Enrolled in Washington County High Schools

School	Enrollment
Adams High School	1200
Jefferson High School	1500
Madison High School	1000
Lincoln High School	1300
Grant High School	1000

If Adams High and Jefferson High both lose 100 students each, Madison High's population stays the same, and both Lincoln High and Grant High gain 200 students each, what happens to the mean of the population of all 5 schools?

- A) The mean increases by 40.
- B) The mean decreases by 40.
- C) The mean remains the same.
- D) The mean increases by 200.

25)



n	# of Equal Slices
1	4
2	8
3	16

Which expression represents the number of equal slices for the n th member of the pattern?

- A) $n + 3$
- B) $n^2 + 3$
- C) $8(n - 1)$
- D) 2^{n+1}

26)

Player	Height (cm)	Weight (kg)
John	190	93
Jake	186	84
Bryan	154	62
Albert	195	80
Connor	169	74
Brice	195	89
Blake	176	73
Zack	183	75
Cliff	159	65
Nick	178	87
Scott	185	93

The table represents the heights and weights of the starting offensive players for a high school varsity football team. What conclusion drawn from the data best describes the correlation between height and weight for the team?

- A) No correlation
- B) Weak positive correlation
- C) Weak negative correlation
- D) Strong positive correlation

27) A kite has side lengths of 2 feet and 4 feet. Each side length is increased by the same number of feet. The expression represents the perimeter of the larger kite:

$$(x + 2) + (x + 2) + (x + 4) + (x + 4)$$

Which expression is equivalent to the expression for the perimeter of the larger kite?

- A) $x + 12$
- B) $4x + 3$
- C) $4(x + 3)$
- D) $4(x + 12)$

28) Alec is trying to find the surface area of a shoe box. What unit will he use?

- A) cubic feet
- B) square feet
- C) cubic inches
- D) square inches

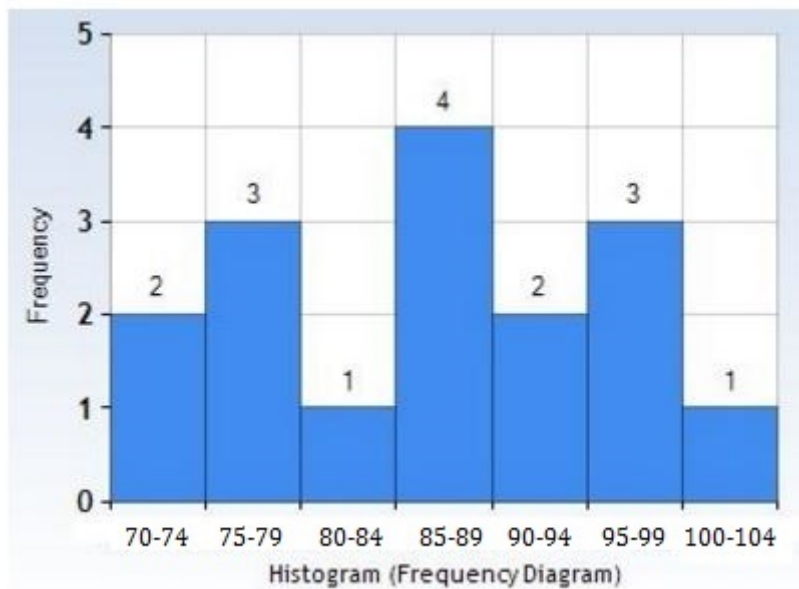
29)

Position	Value of Term
1	4
2	8
3	12
4	16
5	20

What expression shows the relationship between the value of any term and n , its position in the sequence?

- A) $2n$
- B) $2n + 2$
- C) $3n$
- D) $4n$

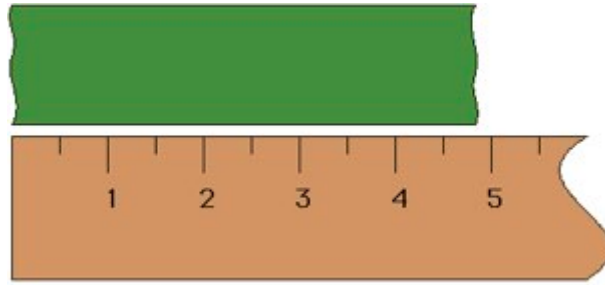
30)



Which data set represents the histogram?

- A) {86, 86, 71, 98, 77, 73, 89, 88, 90, 80, 79, 75, 95, 102, 97, 73}
- B) {86, 86, 91, 98, 77, 73, 89, 88, 90, 80, 79, 75, 95, 102, 97, 73}
- C) {86, 86, 91, 98, 77, 73, 89, 88, 90, 80, 99, 75, 95, 102, 97, 73}
- D) {96, 86, 91, 98, 77, 73, 89, 88, 90, 80, 79, 75, 95, 102, 97, 73}

31)



Which is the MOST precise measurement this ruler can give for the green strip of paper?

- A) 4.00 inches
- B) 4.25 inches
- C) 4.50 inches
- D) 4.75 inches

32)

7, 9, 11, 13...

Generalize the pattern by finding an explicit formula for the n th term.

- A) $n^2 + 5$
- B) $3n + 1$
- C) $2n + 5$
- D) $(n + 1)(n + 2)$

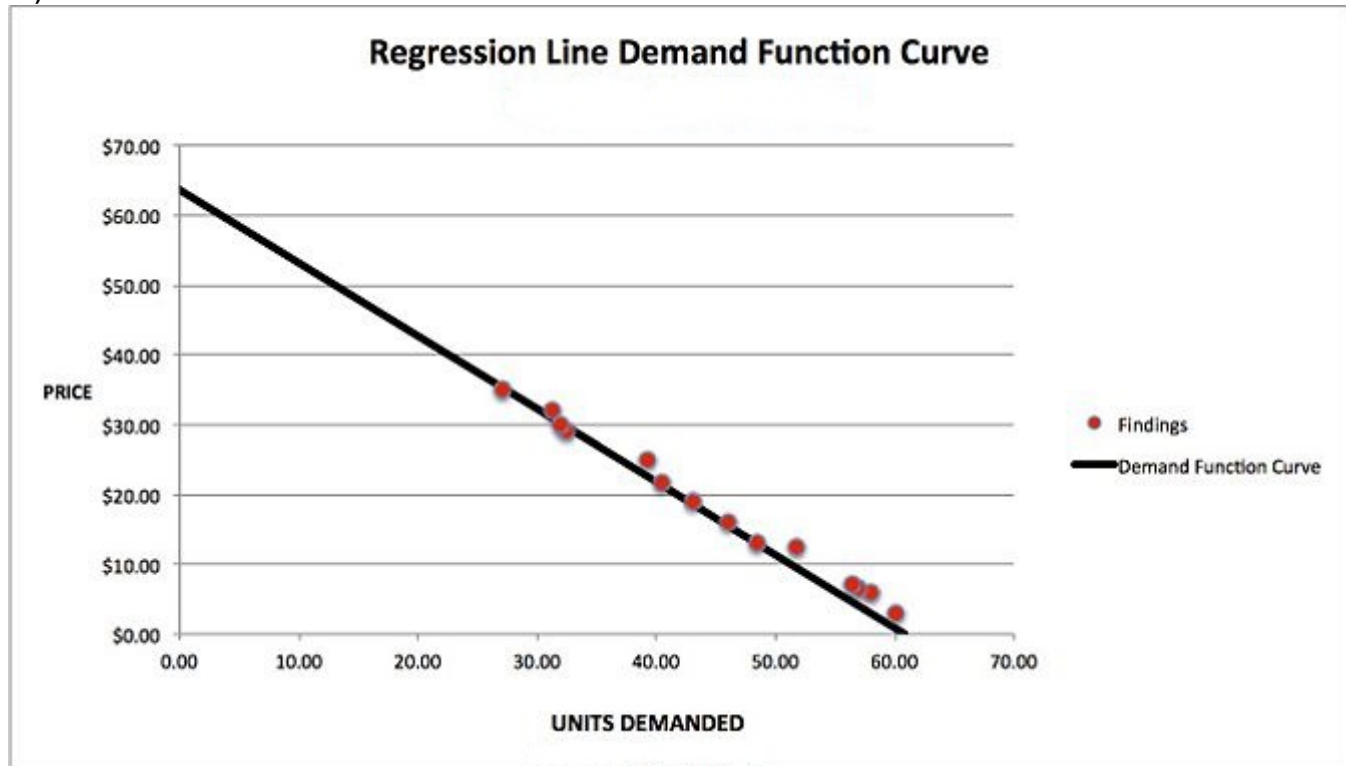
33)

$$\begin{aligned}x &= y - 3 \\x + 3y &= 13\end{aligned}$$

What is the solution to the system of equations?

- A) (1, 4)
- B) (4, 1)
- C) (7, 4)
- D) (2.5, 5.5)

34)



The scatter plot shows a regression line of units demanded and price. If the demand is for 35 units, what would be the predicted price per unit?

- A) \$20
- B) \$23
- C) \$27
- D) \$32

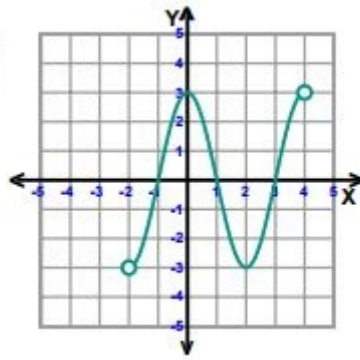
35) Multiply: $(2x^2 - 5x)(4x^2 - 12x + 10)$

- A) $8x^4 - 44x^3 + 40x^2 - 50x$
- B) $8x^4 - 4x^3 + 40x^2 - 50x$
- C) $8x^4 - 44x^3 + 80x^2 - 50x$
- D) $8x^4 - 4x^3 - 40x^2 + 50x$

36) Which function increases by $\frac{1}{3}$ every time the x-increases by 1?

- A) $y = 3^x$
- B) $y = 3x + 1$
- C) $y = \left(\frac{1}{3}\right)^x$
- D) $y = \frac{1}{3}x + 1$

37)



Identify the domain of the function.

- A) $D:\{x \mid -2 < x < 4\}$
- B) $D:\{x \mid -3 < x < 3\}$
- C) $D:\{x \mid -2 \leq x \leq 4\}$
- D) $D:\{x \mid -3 \leq x \leq 3\}$

38) In the expression $2x + 3$, the **2** is a _____.

- A) coefficient
- B) power
- C) product
- D) quotient

39) Annie is renting an apartment and sees in the rental agreement that each year they will raise the rent by 5%. The rent when she first signs the agreement is \$850. What function best models the amount of rent she will have to pay in each future year?

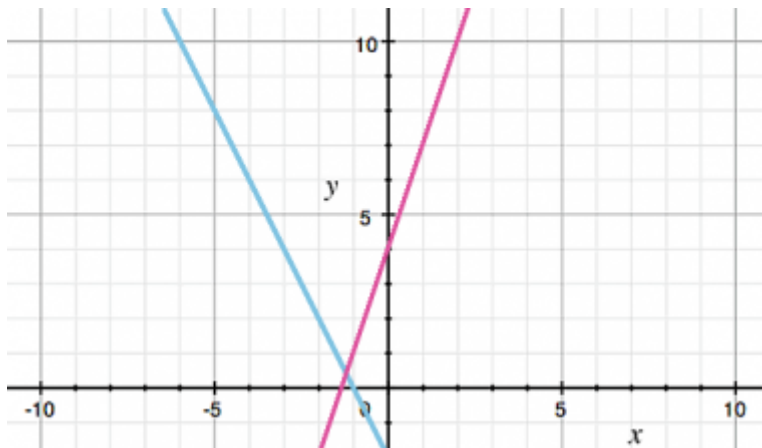
- A) $y = 50x + 850$
- B) $y = 850x + 50$
- C) $y = 850(1.05)^x$
- D) $y = 850(0.05)^x$

40) If $f(x) = 9 + 3x$, find $f(-2)$.

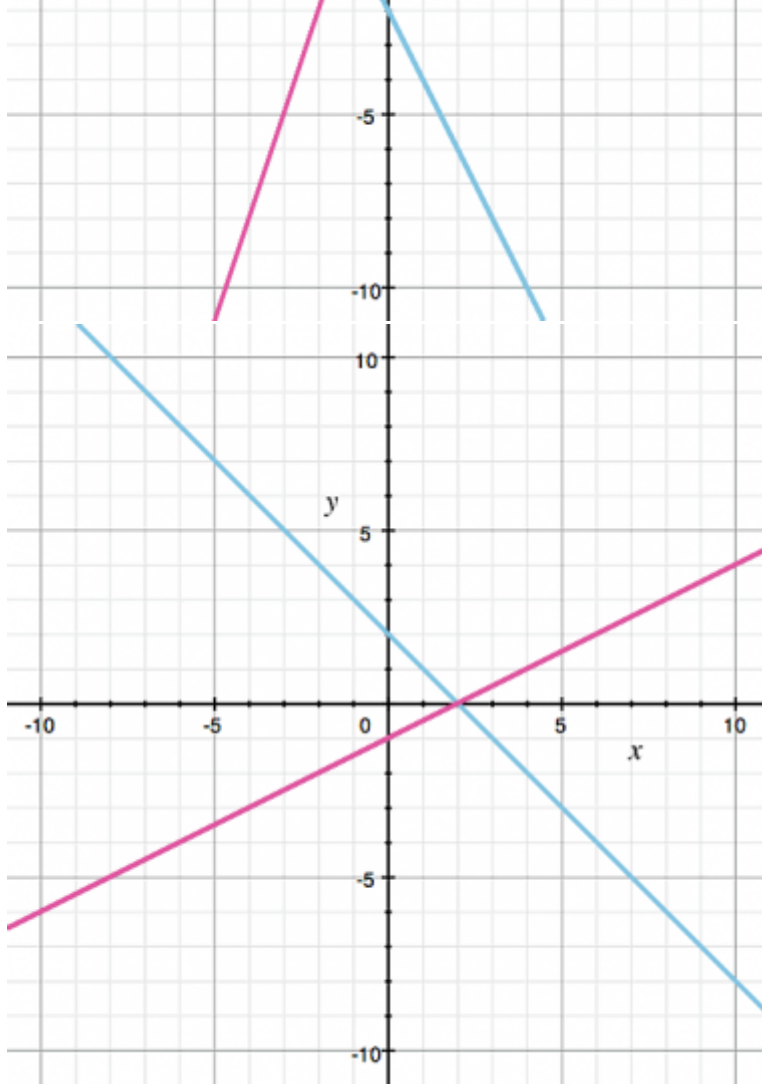
- A) -24
- B) -3
- C) 3
- D) 4

41) Which graph can be used to find the solution for the equation $4x + 2 = x + 3$?

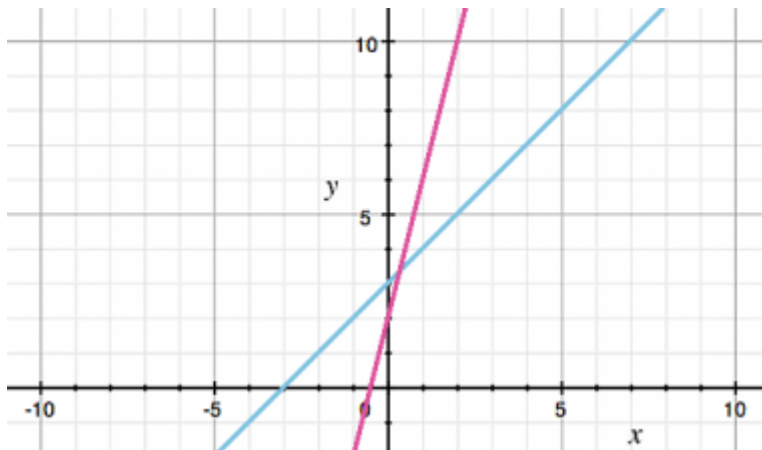
- A)



B)



C)



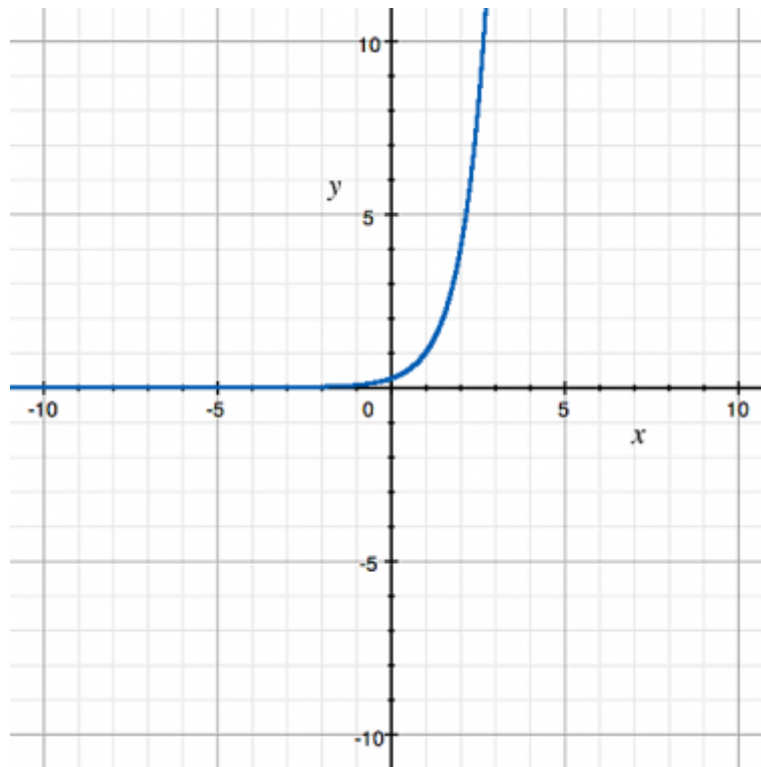
D)



42) The exponential function $y = 2(3)^x$ grows by a factor of 9 between $x = 1$ and $x = 3$. What factor does it grow by between $x = 5$ and $x = 7$?

- A) 3
- B) 6
- C) 9
- D) 18

43)



What function is shown in the graph?

- A) $y = -4^x$
- B) $y = 4^{-x}$
- C) $y = 4^x - 1$
- D) $y = 4^x - 1$

44) Raul bought a soft drink and a sandwich for \$9.90. What is the price of each if the sandwich cost 3.5 times as much as the soft drink?

- A) Sandwich costs \$5.94 and the soda costs \$3.96
- B) Sandwich costs \$7.70 and the soda costs \$2.20
- C) Sandwich costs \$5.40 and the soda costs \$4.50
- D) Sandwich costs \$2.83 and the soda costs \$9.90

45) Solve using the Quadratic Formula.

$$x^2 + 3x - 5 = 0$$

A) $x = \frac{3 \pm \sqrt{29}}{2}$

B) $x = \frac{3 \pm \sqrt{14}}{2}$

C) $x = \frac{3 \pm \sqrt{29}}{3}$

D) $x = \frac{-3 \pm \sqrt{29}}{2}$

46) Add $\sqrt{32x^3y} + \sqrt{50x^3y}$.

- A) $9x\sqrt{4xy}$
- B) $9x\sqrt{2xy}$
- C) These radicals cannot be added.
- D) $\sqrt{82x^6y^2}$

47) Find the average rate of change for $f(x) = x^2 + 7x + 10$ from $x = 0$ to $x = 2$.

- A) 5
- B) 7
- C) 9
- D) 11

48) Evaluate $g(4)$: $g(x) = 8x^2 + 9x - 7$

- A) 121
- B) 135
- C) 154
- D) 157

49) $\sqrt{144} =$

- A) 10
- B) 11
- C) 12
- D) 13

50) Which relation does not represent a function?

- A) a vertical line
- B) $y = \frac{5}{9}x - 3$
- C) a horizontal line
- D) $\{(1, 7), (3, 7), (5, 7), (7, 7)\}$