

Unit 5 Pre-Test

(Test ID: ins700468)

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1 CCSS-MATH 8 F.4

A table of values for the cost of a phone plan in terms of the time spent on the phone is shown below.

Time (minutes)	Cost (\$)
20	17.95
30	19.45
60	23.95

10 ↪ 1.50 $\frac{\Delta y}{\Delta x} = \frac{1.50}{10} = 0.15$

Determine the rate of change for the relationship shown in the table.

Explain what this rate of change means in terms of the phone plan.

The rate of change, 0.15 means
 the phone plan charges 15 cents
 per minute

2 CCSS-MATH 8 SP.4

The two-way frequency table below breaks down the number of patrons who visited a museum during each of the seasons of a particular year into adults and children.

	Spring	Summer	Fall	Winter	Total
Adults	902	1890	723	1009	4524
Children	96	894	101	85	976
Total	998	2584	824	1094	5500

Which of these statements are true based on the table? Select three that apply.

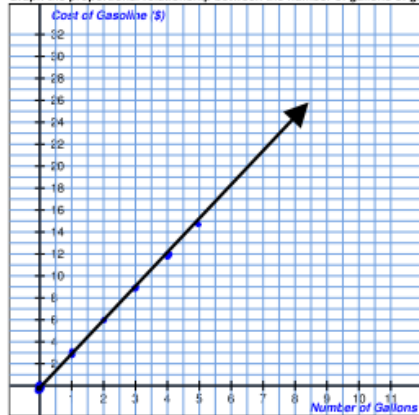
- A A patron who visited in the spring was most likely to be an adult. *more adults*
- B A patron who was a child was most likely to visit in the summer. *more in summer*
- C A patron who visited in the fall was least likely to be an adult. *less children*
- D A patron who was a child was least likely to visit in the winter. *less winter*

3 CCSS-MATH 8 EE.5

Gasoline costs \$3.00 per gallon at a gas station.

$y = 3x$

Graph the proportional relationship between the number of gallons of gasoline and the total cost.



$$\begin{array}{r} x \\ 3 \\ \hline 0 \\ 3 \\ 6 \\ 9 \\ 12 \\ 15 \end{array}$$

4 CCSS-MATH 8 NS.2 *to undo a square, we square-root*

Given that the value of e , a widely used irrational number, is approximately 2.7182818, what can you determine if you know that $1.65^2 = 2.7225$?

A that \sqrt{e} is less than 1.65 and is to the right of 1.65 on a number line

B that \sqrt{e} is less than 1.65 and is to the left of 1.65 on a number line

C that \sqrt{e} is greater than 1.65 and is to the right of 1.65 on a number line

D that \sqrt{e} is greater than 1.65 and is to the left of 1.65 on a number line

Handwritten notes:
 $\sqrt{e} = \sqrt{2.7182818}$
 $\sqrt{1.65^2} = \sqrt{2.7225}$
1.65

5 CCSS-MATH 8 F.4 *y = mx + b*

Determine whether each statement is true or false given the linear functions modeled by Table A and Table B.

Table A:

x	y
0	-6
1	-5
2	-4
3	-3
4	-2

Table B:

x	y
1	2
2	3
3	4
4	5

Rate of Change $y = mt + b$
 where $x = 0$
 $m = \frac{1}{1} = 1$ $b = -6$

$m = \frac{1}{1} = 1$ $b = 1$

Handwritten notes:
 $y = mx + b$
 $3 = 1(2) + b$
 $3 = 2 + b$
 $\frac{2}{1} = \frac{2}{1}$
 $1 = b$

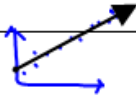
Select True or False for each statement.

- Statement True False
- Table A and Table B have equivalent rates of change. True False
- Table B has a y-intercept of 0. True False
- Table A has a y-intercept of -6. True False

**If they don't give you (0, b), plug-in (x, y) and m to find b.*

6 CCSS-MATH 8 SP.1

$$y = \frac{1}{2}x - 18$$



Suppose all the points on a scatter plot cluster around the graph of $\frac{1}{2}x - 18$, where x represents the value of the variable on the horizontal axis and y represents the value of the variable on the vertical axis. Which of these statements are likely true? Select two that apply.

- A There is a positive association between the two variables.
- B There is a negative association between the two variables.
- C There is a linear association between the two variables. *x exponent = 1*
- D There is a non-linear association between the two variables.

7 CCSS-MATH 8 EE.5 | CA-MATH 7 AF 3.4

The graph below shows the price four families paid M&H Paving to resurface their driveways. What is the price per square foot that M&H Paving charges when resurfacing driveways?



Rate of Change $\frac{\Delta y}{\Delta x} = \frac{600}{400} = \frac{3}{2} = 1.5$

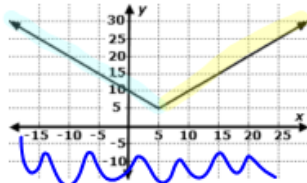
$\frac{2400}{1600} = 1.5$

- A \$0.15
- B \$0.67
- C \$1.50
- D \$2.00

8 CCSS-MATH 8 F.5

Which of these describes the function graphed below?

read from left to right



y doesn't negative go

- A. x is decreasing when y is between negative infinity and 5 and increasing when y is between 5 and positive infinity
- B. x is increasing when y is between negative infinity and 5 and decreasing when y is between 5 and positive infinity
- C. y is decreasing when x is between negative infinity and 5 and increasing when x is between 5 and positive infinity
- D. y is increasing when x is between negative infinity and 5 and decreasing when x is between 5 and positive infinity

9 CCSS-MATH 8 F.2

Consider the linear function $y = 5x + 12$ and the linear function represented by the table of values below.

x	y
2	29
4	53
6	77
8	101

2 (2, 29) 24

$y = mx + b$

$y = 12x + 5$

①. Slope : $\frac{24}{2} = 12$

②. Find b

Select all the statements that are correct.

- A. The function $y = 5x + 12$ has the greater y -intercept.
- B. The function represented by the table has the greater y -intercept.
- C. The two functions have the same y -intercept.
- D. The function $y = 5x + 12$ has the greater rate of change.
- E. The function represented by the table has the greater rate of change.
- F. The two functions have the same rate of change.

10 CCSS-MATH 8 EE.7b

An equation is shown below.

$$\frac{4}{5}(9x - 20) - 3x = \frac{4}{5}x - 6$$

Enter the value of x that makes this equation true.

$x =$

$$\begin{aligned} -0.8(9x - 20) - 3x &= 0.8x - 6 \\ -7.2x + 16 - 3x &= 0.8x - 6 \\ -10.2x + 16 &= 0.8x - 6 \\ +10.2x & \quad +10.2x \\ 16 &= 11x - 6 \\ +6 & \quad +6 \\ 22 &= 11x \\ 2 &= x \end{aligned}$$

11 CCSS-MATH 8 F.4

Abigail wants to attend a community college. Suppose x represents the number of credits she takes and y represents her total fees in dollars. Which of these statements are correct? Select three that apply.

- A If tuition amounts to \$125 plus \$150 per credit, the function that would model this situation is $y = 150x + 125$.
- B If tuition amounts to \$200 plus \$175 per credit, the function that would model this situation is $y = 175y + 200$.
- C If tuition amounts to \$175 plus \$150 per credit, the function that would model this situation is $y = 175x + 150$.
- D If tuition amounts to \$250 plus \$275 per credit, the function that would model this situation is $y = 250y + 275$.
- E If tuition amounts to \$225 plus \$200 per credit, the function that would model this situation is $y = 200x + 225$.
- F If tuition amounts to \$100 plus \$125 per credit, the function that would model this situation is $y = 125x + 100$.

12 CCSS-MATH 8 EE.7a

Select the equation that has no solution.

- A $3(2x + 7) - 6(x + 4) - 3$
- B $3(6x - 5) = 3(6x - 5) + x$
- C $8(x - 3) + 14 = 2(4x + 5)$
- D $13x - 7 = 12(x - 1) + x + 5$

13 CCSS-MATH 8 SP.2

Suppose a scatter plot indicates that there is a positive linear association between two quantitative variables. Which of these statements *must* be correct about the line of best fit for the data in the scatter plot?

- A The line must have a positive x -intercept.
- B The line must have a positive y -intercept.
- C The line must have a positive slope.
- D The line must have no slope.

14 CCSS-MATH 8 EE.2

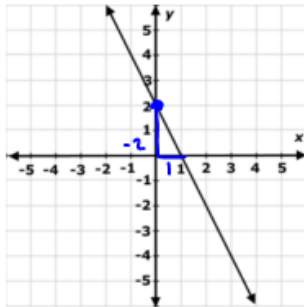
Select two possible values for x in the equation $x^2 = 175$.

- A $\sqrt{7}$
- B $\sqrt{35}$
- C $\frac{25}{\sqrt{7}}$
- D $\sqrt{175}$

$x = \sqrt{175}$
 $\sqrt{25 \cdot 7}$
 $5\sqrt{7}$

15 CCSS-MATH 8 F.3

This graph represents the relationship between x and y .



$y = mx + b$
 $y = -2x + 2$

Which statements are true of this relationship? Select two that apply.

- A The equation $y = \frac{1}{2}x + 2$ models the relationship.
- B The equation $y = 2x - 2$ models the relationship.
- C The equation $y = -\frac{1}{2}x + 2$ models the relationship.
- D The equation $y = -2x + 2$ models the relationship.
- E The relationship between x and y is a linear function.
- F The relationship between x and y is not a linear function.

16 CCSS-MATH 8 EE.5

The table below shows the proportional relationship between the time in hours (h) Sara babysits and the amount in dollars (a) Sara earns babysitting.

h	a
2	8
3	12
4	16
5	20

1 () 4 Sara rate $\frac{4}{1}$

The equation $a = 5h$ shows the relationship between the amount in dollars (a) Abbey earns babysitting and the time in hours (h) Abbey babysits.

Abbey's Rate: 5

Which statement correctly identifies who earns more and how much more she earns?

- A Sara earns \$1 more per hour than Abbey.
- B Sara earns \$4 more per hour than Abbey.
- C Abbey earns \$1 more per hour than Sara.
- D Abbey earns \$5 more per hour than Sara.

17 CCSS-MATH 8 F.3

The equation $y = x + 1$ defines the relationship between x and y , where x is the input and y is the output.

Which statements about the graph of this relationship are true? Select two that apply.

- A The graph is a curved line.
- B The graph is a straight line. x exponent = 1 $y = mx + b$
- C The graph is a vertical line.
- D The graph represents a function.
- E The graph has no negative outputs.
- F The graph passes through the origin.

18 CCSS-MATH 8.F.3

Which functions are nonlinear? Select two that apply.

A $y = -5$ *Hay*

B $y = \frac{x}{3} + 1$ $y = \frac{1}{3}x + 1$

x	y
0	-2
1	-4
2	-6
3	-8

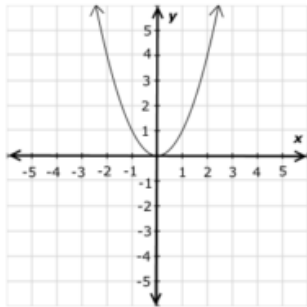
C \rightarrow Constant rate = linear $\frac{\Delta y}{\Delta x}$

x	y
1	1
2	$\frac{1}{2}$
3	$\frac{1}{3}$
4	$\frac{1}{4}$

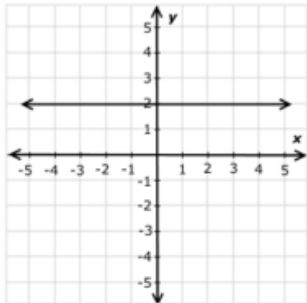
D

Not Constant

E



F



19 CCSS-MATH 8 NS.1

Which fraction is equal to $0.\overline{57}$?

A $\frac{52}{99} = 0.\overline{52}$

B $\frac{19}{33} = 0.\overline{57}$

C $\frac{26}{45} = 0.\overline{57}$

D $\frac{19}{30} = 0.\overline{63}$

20 CCSS-MATH 8 F.1

An incomplete table is shown below.

x	y
2	7
6	9
→ 8	5
8	6

For a functioning relationship, don't repeat your x's!

choose anything that makes the x's repeat.

Fill in the empty cells in the table so that the table of values does not represent a function.

Explain your reasoning.

Please answer on a separate page.

21 CCSS-MATH 8 SP.3

A sandwich shop makes home deliveries. The average amount of time from when an order is placed until when it is delivered can be modeled by the equation $y = 2.5x + 5$, where x is the number of miles between the shop and the delivery location and y is the time in minutes. Which of these statements are correct according to the model? Select two that apply.

A The average amount of time the shop needs to prepare the food for delivery is 2.5 minutes.

B The average amount of time the shop needs to prepare the food for delivery is 5 minutes.

C On average, it takes the delivery person 2.5 minutes to travel 1 mile.

D On average, the delivery person travels 2.5 miles every 1 minute.

E On average, it takes the delivery person 5 minutes to travel 1 mile.

F On average, the delivery person travels 5 miles every 1 minute.

$$\frac{\Delta y : \text{minutes}}{\Delta x : \text{miles}}$$

22 CCSS-MATH 8 EE.4 | CA-MATH 7 NS 1.1

Which of the following shows 440,000,000 in scientific notation?

- A 4.4×10^8
- B 4.4×10^7
- C 4.4×10^{-7}
- D 4.4×10^{-8}

4.4×10^8

23 CCSS-MATH 8 EE.1

An equation is shown below.

$$\frac{2^n}{2^{-5}} = 2^2$$

$\frac{2^1 \cdot 2^1}{2^{-5}} = 2^2$

Enter the value of n that makes this equation true.

$n = -4$

$2^1 \cdot 2^1 \cdot 2^5 = 2^2$ * Add Exponents

$n + 1 + 5 = 2$

$n + 6 = 2$

$n = -4$