

TEST NAME: Online 2 Math 1 Nov 8, 2018
TEST ID: 2665808
GRADE: 09 - Ninth Grade
SUBJECT: Mathematics
TEST CATEGORY: My Classroom

Student: _____
Class: _____
Date: _____

1. The table below shows the number of hours a gas station was open and the number of gallons of gas sold.

Hours Opened	Gallons of Gas Sold
1	368
3	1,009
6	2,664
8	3,445

What is the average rate of change in the amount of gas sold between hours 3 and hours 8?

- A. 390.5 gallons per hour
 - B. 439.6 gallons per hour
 - C. 487.2 gallons per hour
 - D. 890.8 gallons per hour
2. Sara's savings account balance can be modeled by the function $f(x) = 850(1.005)^{12x}$, where x is the number of years Sara has the money in the account. By **about** what percent is Sara's savings account growing each year?
- A. 0.5%
 - B. 0.6%
 - C. 5.0%
 - D. 6.0%

3. Dave graphed the linear function with an x-intercept of 4 and a y-intercept of -12. Which function did Dave graph?
- A. $y = -4x + 12$
- B. $y = 4x - 12$
- C. $y = -3x + 12$
- D. $y = 3x - 12$
4. What is the average rate of change of the function $g(x) = 12(4)^{(x-8)}$ over the interval $[8, 12]$?
- A. 255
- B. 382.5
- C. 765
- D. 1,536.1
5. Suppose a bacteria is introduced to two different solutions in separate petri dishes. The bacteria in the first solution grow at a rate modeled by the function $G(t) = (1.40)^t$. The bacteria in the second solution grow in accordance with the data displayed in the table below.

t	1	2	3	4	5	6
$H(t)$	3.6	4.3	5.2	6.2	7.5	9.0

Which statement **best** describes the growth rates exhibited within the two different solutions?

- A. The bacteria grow at the same rate in both solutions.
- B. The bacteria grow at a slower rate in the first solution.
- C. The bacteria grow at a faster rate in the first solution.
- D. The bacteria decay in the first solution and grow in the second solution.

6. Leonard compared the cost of purchasing a gallon of gas at two different gas stations.

- The function $C(g) = 3.25 + 0.07x$ models the average cost of a gallon of gas at the first gas station after x months.
- The table below shows the average cost of a gallon of gas at the second gas station after different numbers of months.

Numbers of Months	Cost at Second Station
2	\$3.40
4	\$3.46
6	\$3.52
8	\$3.58

Which statement is true?

- A. The first station had a higher initial price per gallon and increased at a greater amount per month than the second station.
- B. The second station had a higher initial price per gallon and increased at a greater amount per month than the first station.
- C. The first station had a higher initial price per gallon but increased at a smaller amount per month than the second station.
- D. The second station had a higher initial price per gallon but increased at a smaller amount per month than the first station.

7. Jason invested money into two different accounts. He deposited \$75 into the first account which earns 6% interest annually. The value of the second account after different amounts of time is shown in the table below.

Number of Months x	Total Value y
1	\$84.80
2	\$89.89
3	\$95.28
4	\$101.00

Which statement is true?

- A. Jason started with \$4 less in the second account than the first account.
 - B. Jason started with \$5 less in the second account than the first account.
 - C. Jason started with \$4 more in the second account than the first account.
 - D. Jason started with \$5 more in the second account than the first account.
8. Jay earns \$50 per week, plus \$5.25 for each hour worked in a given week. Fred's earnings are calculated using the formula $P = 6.25(x + 8)$, where x is the number of hours Matt worked. Which statement is true?
- A. Jay earns \$2.75 per hour less than Fred.
 - B. Fred earns \$40 more than Jay for 40 hours of work.
 - C. Jay and Fred both earn the same for 40 hours of work in a week.
 - D. Fred earns \$42 less than Jay each week when both work 0 hours.

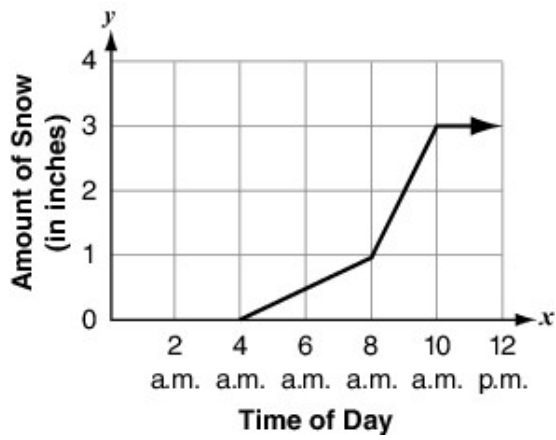
9. Jasmine compared the x -intercept of $f(x) = 2x - 8$ to the x -intercept of the function shown in the table below.

x	$g(x)$
0	16
2	32
4	48
6	64

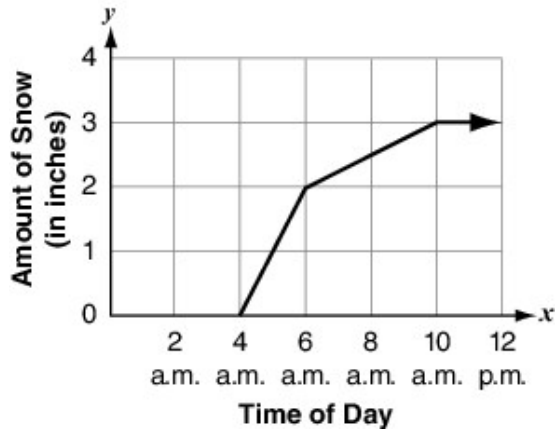
What is the value of the larger x -intercept of the two functions?

- A. -8
- B. -2
- C. 4
- D. 16
10. Jason and Megan joined different online music clubs.
- Jason joined a club that charges him \$1.29 per song he downloads.
 - Megan joined a club that charges using the equation $P = 0.89m + 2.37$, where m is the number of songs she downloads.
- Which statement is true if Jason and Megan each download 15 songs?
- A. Megan will pay \$2.37 less than Jason.
- B. Jason will pay \$2.37 less than Megan.
- C. Megan will pay \$3.63 more than Jason.
- D. Jason will pay \$3.63 more than Megan.
11. On a winter day, it started snowing lightly at 4 a.m. and then heavier at 8 a.m. By 10 a.m. it stopped, and the total snowfall recorded was 3 inches. It didn't snow for the rest of the day. Which of these is a possible graph for the number of inches of snow as a function of time, from midnight to midday?

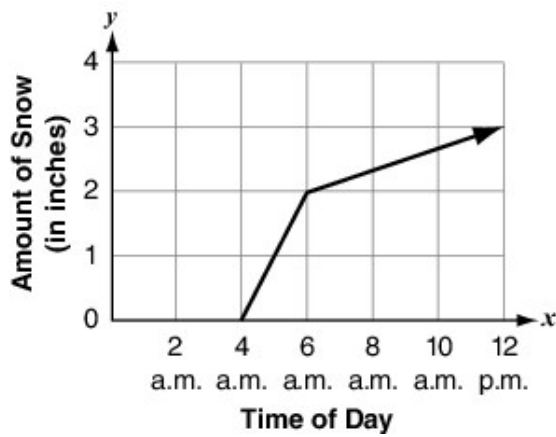
A.



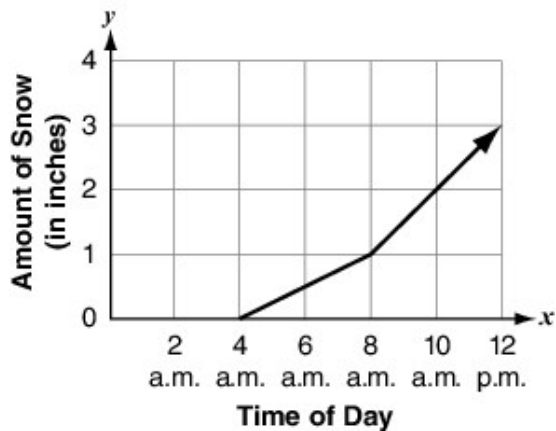
B.



C.

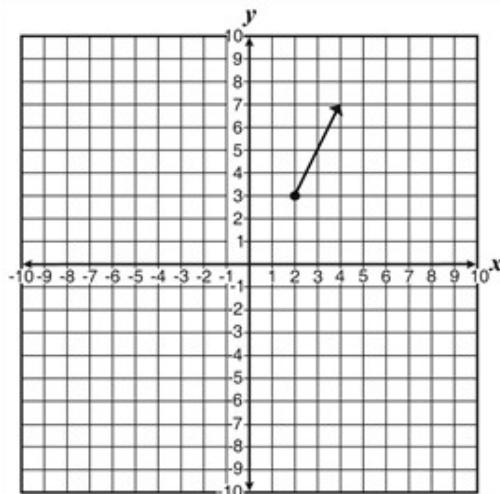


D.



12. Which statement describes the domain and range of the exponential function $f(x) = -4^x$?
- A. The domain and range are both the set of all real numbers.
 - B. The domain is the set of all real numbers and the range is the set of all negative real numbers.
 - C. The domain is the set of all real numbers and the range is the set of all real numbers less than or equal to -4 .
 - D. The domain is the set of all real numbers greater than 0 and the range is the set of all real numbers less than 0 .

13. Which set BEST describes the domain and range of the following graph?



- A. $D = \{x|x \geq 0\}$
 $R = \{y|y \geq 0\}$
 - B. $D = \{x|x \geq 2\}$
 $R = \{y|y \geq 3\}$
 - C. $D = \{x|2 \leq x \leq 4\}$
 $R = \{y|3 \leq y \leq 7\}$
 - D. $D = \{x|x = 2, 3, 4, 5, 6, \dots\}$
 $R = \{y|y = 3, 4, 5, 6, 7, \dots\}$
14. What is the range of the function $y = 3x - 1$ for the domain $4 \leq x \leq 8$?
- A. $\frac{4}{3} \leq y \leq \frac{8}{3}$
 - B. $\frac{5}{3} \leq y \leq 3$
 - C. $2 \leq y \leq 4$
 - D. $11 \leq y \leq 23$