Algebra Quick Quiz 02172022

Question 1.

Which value of x makes the expression $\frac{x+4}{x-3}$ undefined?

(1) –4
(2) –3
(3) 3
(4) 0

Question 2

A store sells self-serve frozen yogurt sundaes. The function $C(w)$ represents the cost, in dollars, of a sundae weighing w ounces. An appropriate domain for the function would be

(1) integers
(2) rational numbers
(3) nonnegative integers
(4) nonnegative rational numbers

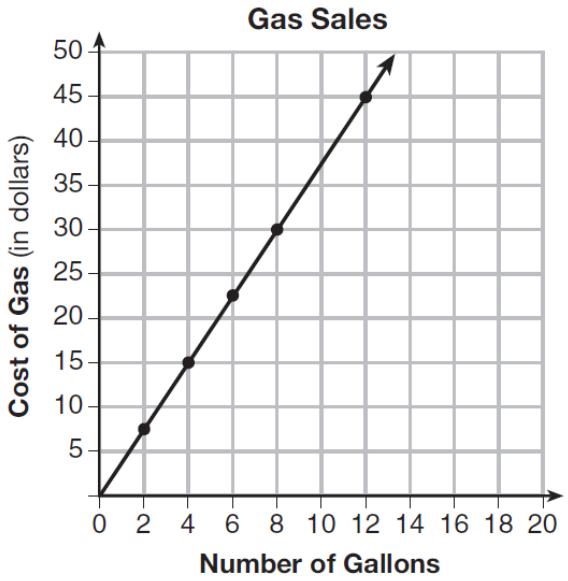
Question 3.

What is the slope of the line that passes through the points (–6,1) and (4,–4)?

(1) –2
(2) 2
(3) $-\frac{1}{2}$
(4) $\frac{1}{2}$

Question 4.

The graph below was created by an employee at a gas station.



Which statement can be justified by using the graph?

(1) If 10 gallons of gas was purchased, $35 was paid.

(2) For every gallon of gas purchased, $3.75 was paid.

(3) For every 2 gallons of gas purchased, $5.00 was paid.

(4) If zero gallons of gas were purchased, zero miles were driven.

Question 5.

Students in a ninth grade class measured their heights, h, in centimeters. The height of the shortest student was 155 cm, and the height of the tallest student was 190 cm. Which inequality represents the range of heights?

(1) $155 < h < 190$

(2) $155 \leq h \leq 190$

(3) $h \geq 155$ or $h \leq 190$

(4) $h > 155$ or $h < 190$

Question 6.

Michael borrows money from his uncle, who is charging him simple interest using the formula $I = Prt$. To figure out what the interest rate, r, is, Michael rearranges the formula to find r. His new formula is r equals

(1) $\frac{I-P}{t}$

(2) $\frac{P-I}{t}$

(3) $\frac{I}{Pt}$

(4) $\frac{Pt}{I}$

Question 7.

Mr. Turner bought x boxes of pencils. Each box holds 25 pencils. He left 3 boxes of pencils at home and took the rest to school. Which expression represents the total number of pencils he took to school?

(1) $22x$

(2) $25x - 3$

(3) $25 - 3x$

(4) $25x - 75$

Question 8.

The zeros of the function $f(x) = 2x^2 - 4x - 6$ are

(1) 3 and -1

(2) 3 and 1

(3) -3 and 1

(4) -3 and -1

Question 9.

Which function is shown in the table below?

x	f(x)
−2	$\frac{1}{9}$
−1	$\frac{1}{3}$
0	1
1	3
2	9
3	27

(1) $f(x) = 3x$

(2) $f(x) = x + 3$

(3) $f(x) = -x^3$

(4) $f(x) = 3^x$

Question 10.

Kathy plans to purchase a car that depreciates (loses value) at a rate of 14% per year. The initial cost of the car is $21,000. Which equation represents the value, v, of the car after 3 years?

(1) $v = 21{,}000(0.14)^3$

(2) $v = 21{,}000(0.86)^3$

(3) $v = 21{,}000(1.14)^3$

(4) $v = 21{,}000(0.86)(3)$

Bonus Question

Question 11a.

A construction company uses the function $f(p)$, where p is the number of people working on a project, to model the amount of money it spends to complete a project. A reasonable domain for this function would be

(1) positive integers

(2) positive real numbers

(3) both positive and negative integers

(4) both positive and negative real numbers

Question 11b.

Consider the graph of the equation $y = ax^2 + bx + c$, when $a \neq 0$. If a is multiplied by 3, what is true of the graph of the resulting parabola?

(1) The vertex is 3 units above the vertex of the original parabola.

(2) The new parabola is 3 units to the right of the original parabola.

(3) The new parabola is wider than the original parabola.

(4) The new parabola is narrower than the original parabola.