Algebra Quick Quiz 02232022

Question 1.

The cost of airing a commercial on television is modeled by the function $C(n) = 110n + 900$, where n is the number of times the commercial is aired. Based on this model, which statement is true?

(1) The commercial costs \$0 to produce and \$110 per airing up to \$900.

(2) The commercial costs \$110 to produce and \$900 each time it is aired.

(3) The commercial costs \$900 to produce and \$110 each time it is aired.

(4) The commercial costs \$1010 to produce and can air an unlimited number of times.

Question 2

If the area of a rectangle is expressed as $x^4 - 9y^2$, then the product of the length and the width of the rectangle could be expressed as

(1) $(x - 3y)(x + 3y)$

(2) $(x^2 - 3y)(x^2 + 3y)$

(3) $(x^2 - 3y)(x^2 - 3y)$

(4) $(x^4 + y)(x - 9y)$

Question 3.

It takes Tammy 45 minutes to ride her bike 5 miles. At this rate, how long will it take her to ride 8 miles?

(1) 0.89 hour

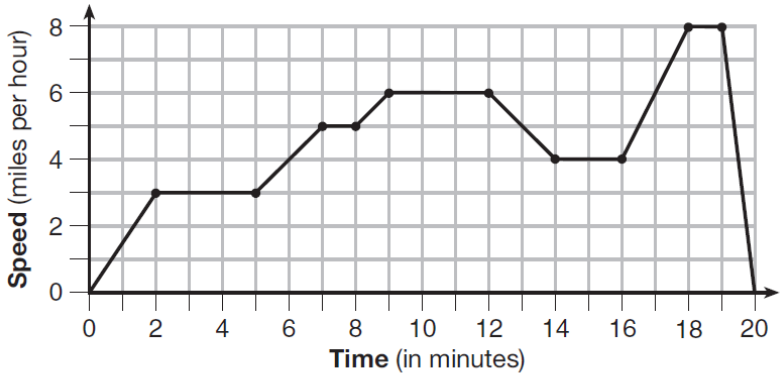
(2) 1.125 hours

(3) 48 minutes

(4) 72 minutes

Question 4.

The graph below represents a jogger's speed during her 20-minute jog around her neighborhood.



Which statement best describes what the jogger was doing during the 9–12 minute interval of her jog?

(1) She was standing still.

(2) She was increasing her speed.

(3) She was decreasing her speed.

(4) She was jogging at a constant rate.

Question 5.

Which table represents a function?

x	2	4	2	4
f(x)	3	5	7	9

(1)

x	3	5	7	9
f(x)	2	4	2	4

(3)

x	0	−1	0	1
f(x)	0	1	−1	0

(2)

x	0	1	−1	0
f(x)	0	−1	0	1

(4)

Question 6.

If the area of a rectangle is expressed as $x^4 - 9y^2$, then the product of the length and the width of the rectangle could be expressed as

(1) $(x - 3y)(x + 3y)$

(2) $(x^2 - 3y)(x^2 + 3y)$

(3) $(x^2 - 3y)(x^2 - 3y)$

(4) $(x^4 + y)(x - 9y)$

Question 7.

What are the roots of the equation $x^2 - 7x + 6 = 0$?

(1) 1 and 7

(2) –1 and 7

(3) –1 and –6

(4) 1 and 6

Question 8.

Which expression represents $\frac{27x^{18}y^5}{9x^6y}$ in simplest form?

(1) $3x^{12}y^4$

(2) $3x^3y^5$

(3) $18x^{12}y^4$

(4) $18x^3y^5$

Question 9.

Marie currently has a collection of 58 stamps. If she buys s stamps each week for w weeks, which expression represents the total number of stamps she will have?

(1) $58sw$

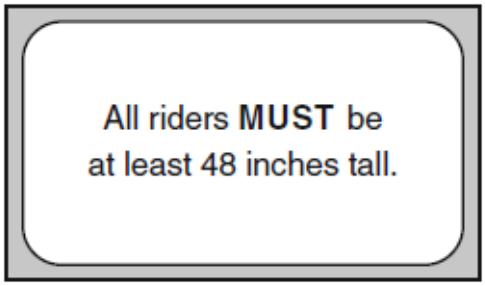
(2) $58 + sw$

(3) $58s + w$

(4) $58 + s + w$

Question 10.

The sign shown below is posted in front of a roller coaster ride at the Wadsworth County Fairgrounds.



If h represents the height of a rider in inches, what is a correct translation of the statement on this sign?

(1) $h < 48$

(2) $h > 48$

(3) $h \leq 48$

(4) $h \geq 48$

Bonus Question

Question 11a.

Which value of n makes the expression $\frac{5n}{2n-1}$ undefined?

(1) 1

(2) 0

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

(4) $\frac{1}{2}$

Question 11b.

Which value of x is in the solution set of $\frac{4}{3}x + 5 < 17$?

(1) 8

(2) 9

(3) 12

(4) 16