Algebra 1 Quick-Quiz-12042023

Question 1.

If Lylah completes the square for $f(x) = x^2 - 12x + 7$ in order to find the minimum, she must write $f(x)$ in the general form $f(x) = (x - a)^2 + b$. What is the value of a for $f(x)$?

(1) 6
(2) -6
(3) 12
(4) -12

Hint: Remember how to find the vertex of a parabola?

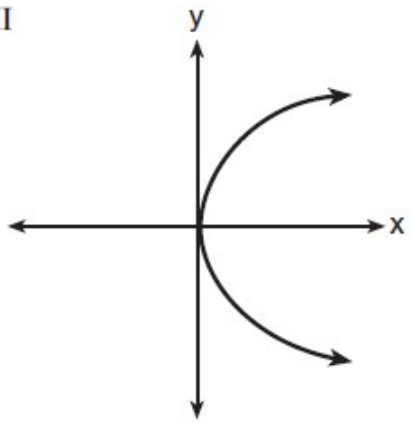
Question 2

Which representations are functions?

I

x	y
2	6
3	–12
4	7
5	5
2	–6

III



II $\{(1,1), (2,1), (3,2), (4,3), (5,5), (6,8), (7,13)\}$

IV $y = 2x + 1$

(1) I and II
(2) II and IV
(3) III, only
(4) IV, only

Question 3. Use your graphing software to check your answer.

If $f(x) = \frac{\sqrt{2x+3}}{6x-5}$, then $f\left(\frac{1}{2}\right) =$

(1) 1
(2) -2
(3) -1
(4) $-\frac{13}{3}$

Question 4.

The zeros of the function $f(x) = 3x^2 - 3x - 6$ are

(1) -1 and -2
(2) 1 and -2
(3) 1 and 2
(4) -1 and 2

Question 5.

The table below represents the function F.

x	3	4	6	7	8
$F(x)$	9	17	65	129	257

The equation that represents this function is

(1) $F(x) = 3^x$
(2) $F(x) = 3x$
(3) $F(x) = 2^x + 1$
(4) $F(x) = 2x + 3$

Question 6.

A typical cell phone plan has a fixed base fee that includes a certain amount of data and an overage charge for data use beyond the plan. A cell phone plan charges a base fee of \$62 and an overage charge of \$30 per gigabyte of data that exceed 2 gigabytes. If C represents the cost and g represents the total number of gigabytes of data, which equation could represent this plan when more than 2 gigabytes are used?

(1) $C = 30 + 62(2 - g)$
(2) $C = 30 + 62(g - 2)$
(3) $C = 62 + 30(2 - g)$
(4) $C = 62 + 30(g - 2)$

Question 7.

The solution of the equation $(x + 3)^2 = 7$ is

(1) $3 \pm \sqrt{7}$
(2) $7 \pm \sqrt{3}$
(3) $-3 \pm \sqrt{7}$
(4) $-7 \pm \sqrt{3}$

Question 8.

John has four more nickels than dimes in his pocket, for a total of \$1.25. Which equation could be used to determine the number of dimes, x, in his pocket?

(1) $0.10(x + 4) + 0.05(x) = \$1.25$
(2) $0.05(x + 4) + 0.10(x) = \$1.25$
(3) $0.10(4x) + 0.05(x) = \$1.25$
(4) $0.05(4x) + 0.10(x) = \$1.25$

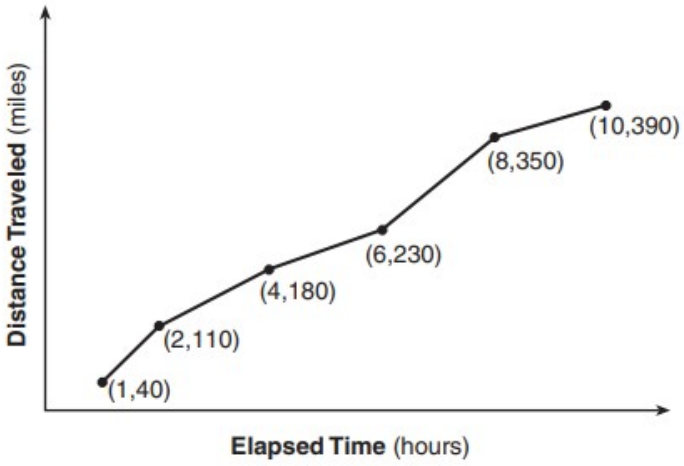
Question 9.

A toy rocket is launched from the ground straight upward. The height of the rocket above the ground, in feet, is given by the equation $h(t) = -16t^2 + 64t$, where t is the time in seconds. Determine the domain for this function in the given context. Explain your reasoning.

You should be able to figure out the above question without graphing software but use it if you have to.

Question 10.

The Jamison family kept a log of the distance they traveled during a trip, as represented by the graph below.



During which interval was their average speed the greatest?

(1) the first hour to the second hour

(2) the second hour to the fourth hour

(3) the sixth hour to the eighth hour

(4) the eighth hour to the tenth hour

Bonus Question
Question 11

27. The function f is defined by $f(x) = x^2 - 2x - 24$.

Part A

If $f(x + 3) = x^2 + kx - 21$, what is the value of k?

Enter your answer in the box.

Part B

What are the zero(s) of $f(x + 3)$? Select **all** that apply.

A. $x = -7$ B. $x = -4$ C. $x = -2$

D. $x = 0$ E. $x = 3$ F. $x = 6$