

Algebra Quick Quiz 12042019

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 $f(x)$?

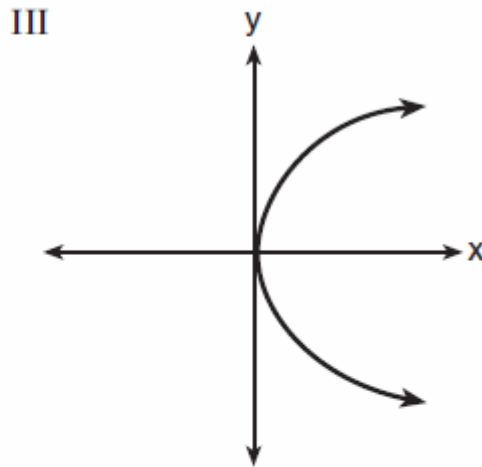
- (1) 6
(2) -6
(3) 12
(4) -12

Question 2

Which representations are functions?

I

x	y
2	6
3	-12
4	7
5	5
2	-6



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

(3) -1

(2) -2

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

Question 4.

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

(1) -1 and -2

(3) 1 and 2

(2) 1 and -2

(4) -1 and 2

Question 5.

Which recursively defined function has a first term equal to 10 and a common difference of 4?

- | | |
|--|---------------------------------------|
| (1) $f(1) = 10$
$f(x) = f(x - 1) + 4$ | (3) $f(1) = 10$
$f(x) = 4f(x - 1)$ |
| (2) $f(1) = 4$
$f(x) = f(x - 1) + 10$ | (4) $f(1) = 4$
$f(x) = 10f(x - 1)$ |

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

Question 7.

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

(1) $3 \pm \sqrt{7}$

(3) $-3 \pm \sqrt{7}$

(2) $7 \pm \sqrt{3}$

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

Question 8. Use your graphing software to if you need to.

How many real solutions does the equation $x^2 - 2x + 5 = 0$ have? Justify your answer.

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 this out without graphing software but use it if you have to.

Question 10.

Take note that this question has 2 answers.

Jackson is starting an exercise program. The first day he will spend 30 minutes on a treadmill. He will increase his time on the treadmill by 2 minutes each day. Write an equation for $T(d)$, the time, in minutes, on the treadmill on day d .

Find $T(6)$, the minutes he will spend on the treadmill on day 6.

Bonus Question

Question 11

Solve for x algebraically: $7x - 3(4x - 8) \leq 6x + 12 - 9x$

If x is a number in the interval $[4,8]$, state all integers that satisfy the given inequality. Explain how you determined these values.