Algebra 1 Quick-Quiz-12192024

Question 1.

The formula for the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. The radius, r, of the cone may be expressed as

(1) $\sqrt{\frac{3V}{\pi h}}$

(2) $\sqrt{\frac{V}{3\pi h}}$

(3) $3\sqrt{\frac{V}{\pi h}}$

(4) $\frac{1}{3}\sqrt{\frac{V}{\pi h}}$

Question 2

Which table represents a function?

x	y
2	–3
3	0
4	–3
2	1

(1)

x	y
–3	0
–2	1
–3	2
2	3

(3)

x	y
1	2
1	3
1	4
1	5

(2)

x	y
–2	–4
0	2
2	4
4	6

(4)

Question 3.

Which expression is equivalent to $2(x^2 - 1) + 3x(x - 4)$?

(1) $5x^2 - 5$

(2) $5x^2 - 6$

(3) $5x^2 - 12x - 1$

(4) $5x^2 - 12x - 2$

Question 4.

The value of x that satisfies the equation $\frac{4}{3} = \frac{x+10}{15}$ is

(1) -6

(2) 5

(3) 10

(4) 30

Question 5.

Which expression is equivalent to $3x^2 - 12x + 13$?

A. $3(x-2)^2 + 1$

B. $3(x-2)^2 + 7$

C. $3(x-2)^2 + 11$

D. $3(x-2)^2 + 25$

Question 6.

The spray of a fountain has a height, in feet, that can be modeled by the polynomial expression $-x^2 + 14x - 33$.

Which statement about the height of the spray is true?

A. The expression $-(x - 7)^2 + 16$ reveals a maximum height of 7 feet.

B. The expression $-(x - 7)^2 + 16$ revels a maximum height of 16 feet.

C. The expression $-(x - 7)^2 - 16$ reveals a maximum height of 7 feet.

D. The expression $-(x - 7)^2 - 16$ reveals a maximum height of 16 feet.

Question 7.

What is the vertex form of $f(x)$?

A. $f(x) = 2(x - 3)^2 - 4$

B. $f(x) = 2(x + 3)^2 - 4$

C. $f(x) = 2(x - 1.5)^2 - 12.5$

D. $f(x) = 2(x + 1.5)^2 - 12.5$

Question 8.

The distance a free falling object has traveled can be modeled by the equation $d = \frac{1}{2}at^2$, where a is acceleration due to gravity and t is the amount of time the object has fallen. What is t in terms of a and d?

(1) $t = \sqrt{\frac{da}{2}}$

(2) $t = \sqrt{\frac{2d}{a}}$

(3) $t = \left(\frac{da}{d}\right)^2$

(4) $t = \left(\frac{2d}{a}\right)^2$

Question 9.

The formula for the sum of the degree measures of the interior angles of a polygon is $S = 180(n - 2)$. Solve for n, the number of sides of the polygon, in terms of S.

Question 10.

A ball is thrown into the air from the top of a building. The height, $h(t)$, of the ball above the ground t seconds after it is thrown can be modeled by $h(t) = -16t^2 + 64t + 80$. How many seconds after being thrown will the ball hit the ground?

(1) 5

(2) 2

(3) 80

(4) 144

Bonus Question
Question 11

Choose the expressions that are equivalent to $x^2 + 4x + 3$.

Select **all** that apply.

- ☐ A. $(x + 2)^2 - 1$
- ☐ B. $(x + 2)^2 + 1$
- ☐ C. $(x - 1)(x - 3)$
- ☐ D. $(x + 1)\ (x + 3)$
- ☐ E. $(x - 1)(x + 4)$