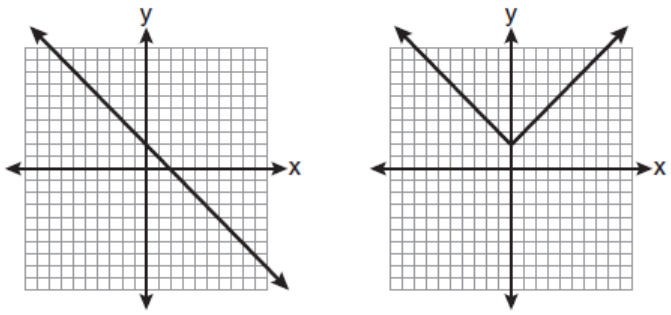
Algebra Quick-Quiz-03212022

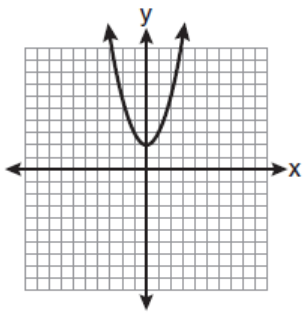
Question 1.

Which is the graph of $y = |x| + 2$?



(1)

(3)



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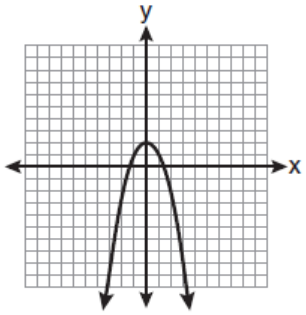


(4)

Question 2

The formula for the resistance of a conductor with voltage V and current I is $r = \frac{V}{I}$. Solve for V.

a. $I = Vr$

b. $V = \frac{I}{r}$

c. $V = Ir$

d. $V = \frac{r}{I}$

Question 3.

Which interval notation represents the set of all real numbers greater than 2 and less than or equal to 20?

(1) (2,20)

(2) (2,20]

(3) [2,20)

(4) [2,20]

Question 4.

Which system has no solution?

a. $\begin{cases} y = x + 4 \\ y - x = -4 \end{cases}$

b. $\begin{cases} 2y = 2x + 8 \\ -2x = 2y - 8 \end{cases}$

c. $\begin{cases} y = \frac{1}{2}x + 6 \\ 2x + 5 = y \end{cases}$

d. $\begin{cases} y = 4x + 1 \\ y - 1 = 4x \end{cases}$

Question 5.

Given $f(x) = x^2 + 1$ with domain D: $\{-2, -1, 0, 1, 3\}$. What is the range, R?

a. R: $\{-1, -2, 0, 1, 3\}$

b. R: $\{4, 1, 0, 1, 9\}$

c. R: $\{5, 2, 1, 2, 10\}$

d. R: $\{3, 0, -1, 0, 8\}$

Question 6.

Solve $y + w - \frac{3}{4}z = 0$ for z.

a. $z = \frac{4}{3}(y + w)$

b. $z = \frac{3}{4}(y + w)$

c. $z = \frac{4}{3}w + y$

d. $z = \frac{4y}{3} + w$

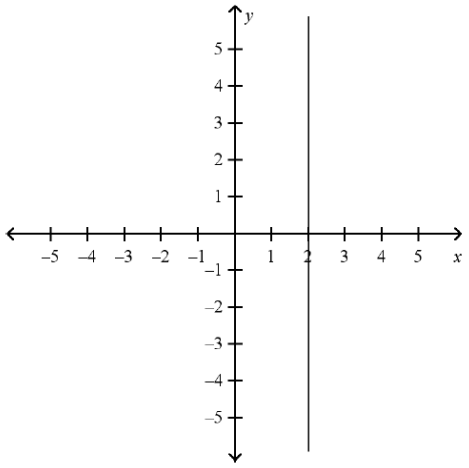
Question 7.

What is $3\sqrt{2} + \sqrt{8}$ expressed in simplest radical form?

(1) $3\sqrt{10}$
(2) $3\sqrt{16}$
(3) $5\sqrt{2}$
(4) $7\sqrt{2}$

Question 8.

Tell whether the slope of the line is positive, negative, zero, or undefined.



a. negative
b. positive
c. undefined
d. zero

Question 9.

Subtract $(6a^2 + 3a) - (4a^2 + 2a)$.

a. $2a^2 + a$
b. $2a^2 + 5a$
c. 3
d. $3a^3$

Question 10.

Leah scored p points in the first half of the basketball game. In the second half, she scored 3 more than $\frac{1}{2}$ the number of points she scored in the first half of the game. Altogether, she scored 21 points in the game. The following equation represents this situation where p represents the number of points Leah scored in the first half.

$$p + \left(\frac{1}{2}p + 3\right) = 21$$

How many points did Leah score in the first half?

a. 6
b. 9
c. 12
d. 18

Bonus Question

Question 11a

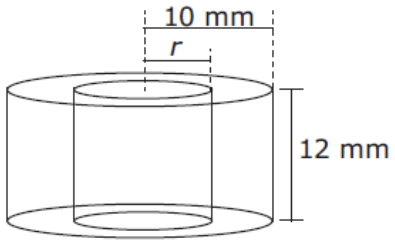
What is the slope of the line whose equation is $3x - 7y = 9$?

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

Question 11b.

The volume of a cylinder, $\mathbf{V=\pi r^2 h}$
Where **r** is the radius and **h** is the height of the cylinder.

The diagram shows two cylinders with bases that have the same center and heights of 12 millimeters.



34. Part A

Which is a function for the volume, V, that is inside the larger cylinder but outside the one with the smaller radius r?

Ⓐ $V(r) = 1{,}200\pi - 12\pi r^2$

Ⓑ $V(r) = 120\pi - 12\pi r^2$

Ⓒ $V(r) = 12\pi r^2$

Ⓓ $V(r) = 12\pi(10 - r)^2$

Part B

Suppose that there is space between the inner and outer cylinders and the radius of the inner cylinder must be an integer greater than or equal to 3. What is the domain of V?

Ⓐ all integers greater than or equal to 3

Ⓑ 3, 4, 5, 6, 7, 8, 9, or 10

Ⓒ 3, 4, 5, 6, 7, 8, or 9

Ⓓ $3 \leq m \leq 9$