

Practice Test

... Algebra Tools

1

Two less than the quotient of three and a number n

Which of the following is an expression for the statement above?

- A) $2 - \frac{n}{3}$
- B) $\frac{n}{3} - 2$
- C) $\frac{3}{n} - 2$
- D) $2 - \frac{3}{n}$

2

How much greater than $n - 11$ is $n + 3$?

- A) 8
- B) 10
- C) 12
- D) 14

3

Johnny received m text messages on Friday, three less than twice as many text messages on Saturday than on Friday, and five more text messages on Sunday than on Saturday. What is the total number of text messages he received over the three days?

- A) $4m + 2$
- B) $5m - 1$
- C) $4m - 2$
- D) $5m + 1$

4

What number is halfway between $-\frac{5}{6}$ and $\frac{1}{3}$ on a number line?

- A) $-\frac{1}{4}$
- B) $-\frac{1}{3}$
- C) $-\frac{1}{2}$
- D) $-\frac{5}{12}$

5

What is 4.4985 rounded to the nearest hundredth?

- A) 4.49
- B) 4.498
- C) 4.499
- D) 4.50

6

Which of the following expressions is equivalent to $3a + \frac{1}{2}(b - 2c) - \frac{1}{2}(2a + 3b)$?

- A) $\frac{3}{2}a - \frac{1}{2}b - c$
- B) $\frac{3}{2}a + b - c$
- C) $2a - b - c$
- D) $2a + b - c$

7

How many minutes are there in $2h$ hours and $6m$ minutes?

- A) $60h + 12m$
- B) $120h + 6m$
- C) $60h + 6m$
- D) $120h + 60m$

8

1. Add 5 to a number n .
2. Divide by 8.
3. Subtract by 1.
4. Multiply by 8.

When the sequence of operations above has been completed in order, which of the following is an expression for the statement above?

- A) $n - 1$
- B) $n - 2$
- C) $n - 3$
- D) $n - 4$

9

Which of the following expressions is equivalent to $(2y - x) - 2(y - 2z) - 4(x + z)$?

- A) $-3x$
- B) $-5x$
- C) $-3x + 8z$
- D) $-5x - 8z$

10

If $x = 10$, what is the value of $\frac{x}{2} + \frac{x}{20} + \frac{x}{200}$?

11

If x and y are positive integers and $2x + 5y = 18$, what is the value of x ?

12

If $a = 3$, $b = -1$, and $c = -2$, what is the value of $7 - \frac{a - 12 \div (2 - b)}{c + 3}$?

Answers

Algebra Tools

1. C

The phrase “two less than the quotient of three and a number n ” is translated $\frac{3}{n} - 2$, not $2 - \frac{3}{n}$.

2. D

$$(n+3) - (n-11) = n+3 - n+11 = 14$$

3. B

Number of text messages he received on Friday is m , on Saturday is $2m-3$, and on Sunday is $2m-3+5$.
The total number of text messages he received over the three days is
 $m + (2m-3) + (2m-3+5) = 5m-1$

4. A

To find a number which is halfway between two numbers, find the average of the two numbers.

$$\frac{-\frac{5}{6} + \frac{1}{3}}{2} = \frac{(-\frac{5}{6} + \frac{1}{3})6}{(2)6} = \frac{-5+2}{12} = \frac{-3}{12} = -\frac{1}{4}$$

5. D

Underline 9, the digit in the hundredths place.
4.4985

The digit to the right of the underlined digit is more than 5, round up. Therefore, 4.4985 rounded to the nearest hundredths place is 4.50.

6. C

$$\begin{aligned} 3a + \frac{1}{2}(b-2c) - \frac{1}{2}(2a+3b) \\ = 3a + \frac{1}{2}b - c - a - \frac{3}{2}b \\ = 2a - b - c \end{aligned}$$

7. B

There are $2h \times 60$ minutes in $2h$ hours.
There are $(120h + 6m)$ minutes in $2h$ hours and $6m$ minutes.

8. C

1. Add 5 to a number n . $\Rightarrow n+5$
 2. Divide by 8. $\Rightarrow \frac{(n+5)}{8}$
 3. Subtract by 1. $\Rightarrow \frac{(n+5)}{8} - 1$
 4. Multiply by 8. $\Rightarrow [\frac{(n+5)}{8} - 1] \times 8$
- $$[\frac{(n+5)}{8} - 1] \times 8 = (n+5) - 8 = n-3$$

9. B

$$\begin{aligned} (2y-x) - 2(y-2z) - 4(x+z) \\ = 2y-x-2y+4z-4x-4z \\ = -5x \end{aligned}$$

10. 5.55

$$\begin{aligned} \frac{x}{2} + \frac{x}{20} + \frac{x}{200} &= \frac{10}{2} + \frac{10}{20} + \frac{10}{200} \\ &= 5 + 0.5 + 0.05 = 5.55 \end{aligned}$$

Answers

11.4

Choose the first few positive integers for x and make substitutions for the given equation. Construct a table of values.

x	y
1	not an integer
2	not an integer
3	not an integer
4	2

Both x and y are positive integers when x equals 4 and y equals 2. Therefore the value of x is 4.

12.8

$$\begin{aligned}7 - \frac{a - 12 \div (2 - b)}{c + 3} &= 7 - \frac{3 - 12 \div (2 - (-1))}{-2 + 3} \\ &= 7 - \frac{3 - 12 \div (3)}{1} = 7 - \frac{3 - 4}{1} = 7 - \frac{-1}{1} \\ &= 7 + 1 = 8\end{aligned}$$