


1.3 Writing Expressions

A **variable** is a symbol, usually a letter, that represents the value(s) of a variable quantity.

An **algebraic expression** is a mathematical phrase that includes one or more variables.



Aug 19-11:04 AM

Translating Words into Mathematical Symbols

| Key Words | | Mathematical Translation |
|----------------------------|-------------------------------------|--------------------------|
| add sum plus | increase more more than | + |
| minus fewer reduce | difference less than decrease | - |
| product of | times each | × |
| quotient ration | divided by divided into | ÷ |
| is was | are equals | = |
| at most | is less than | < |
| at least is larger than | is great than is bigger than | > |

Aug 21-9:16 AM

Write an algebraic expression for the following word phrase.

- 32 more than a number n
- 58 less than a number
- the sum of a number and twelve
- the difference between eight and y

Aug 21-9:19 AM

write an algebraic expression for the following word phrase.

- eleven divided by the number x
- the quotient of a number and sixteen
- eight times a number
- the product of ten and a number

Aug 21-9:19 AM

Write an algebraic expression for the following word phrase.

- three more than twice a number x
 $3 + 2x$
- nine less than the quotient of six and a number
 $\frac{6}{x} - 9$
- the product of four and the sum of seven and p
 $4(7 + p)$

Aug 21-9:28 AM

Write an algebraic expression for the following word phrase.

- eight less than the product of a number and four
 $4n - 8$
- the quotient of five and the sum of twelve and a number
 $\frac{5}{12 + n}$

Aug 21-9:28 AM

Write an expression for the situation.

a) a piece of ribbon r feet long is cut from a ribbon 8 feet long. How much ribbon is left?

$$8 - r$$

b) You work with 5 other people at an ice cream shop. All the workers put their tips in a jar and share them equally. What is each person's share (s) of the tips?

$$\frac{s}{6}$$

Jan 9-9:39 AM

A truck rental company charges \$49 to rent a truck plus \$.75 for each mile. Write an expression for the total cost to rent the truck for n miles.

Truck Rental Fees

| Number of Miles | Cost |
|-----------------|---------------------------|
| 1 | $\$49 + (\$.75 \times 1)$ |
| 2 | $\$49 + (\$.75 \times 2)$ |
| 3 | $\$49 + (\$.75 \times 3)$ |
| n | $49 + .75n$ |

Aug 21-3:10 PM

Sightseeing While on vacation, you rent a bicycle. You pay \$9 for each hour you use it. It costs \$5 to rent a helmet while you use the bicycle.

Bike Rental

| Number of Hours | Rental Cost |
|-----------------|-----------------|
| 1 | $9 \cdot 1 + 5$ |
| 2 | $9 \cdot 2 + 5$ |
| 3 | $9 \cdot 3 + 5$ |
| n | $9n + 5$ |

Aug 21-3:10 PM

Classwork: p.18 #4 - 20 even
Copy the questions.

1.4 Notes in 15 minutes

Jan 9-8:38 AM

1.4 Writing Equations and Inequalities

a. The difference of twice a number k and 8 is 12.

$$2k - 8 = 12$$

b. The product of 6 and a number n is at least 24.

$$6n \geq 24$$

c. A number y is no less than 5 and no more than 13.

$$5 \leq y \leq 13$$

Jan 9-11:08 AM

Write the equation/inequality for:

a) 8 less than a number is at least 12.

$$n - 8 \geq 12$$

b) The product of 4 and a number increased by 3 is 8.

$$4n + 3 = 8$$

c) The product of 8 and the sum of 5 and x is less than 16.

$$8(5 + x) < 16$$

Jan 14-12:48 PM

A solution of an equation containing a variable is a value of the variable that makes the equations true.

Is $x = 6$ a solution of the equation $32 = 2x + 12$?

$$32 \stackrel{?}{=} 2(6) + 12$$

$$32 \stackrel{?}{=} 12 + 12$$

$$32 \neq 24 \quad \text{No}$$

Aug 30-2:54 PM

Determine whether $m = \frac{1}{2}$ is a solution to the following equations:

A. $6m - 8 = -5$

$$6\left(\frac{1}{2}\right) - 8 \stackrel{?}{=} -5$$

$$3 - 8 \stackrel{?}{=} -5$$

$$-5 = -5 \quad \text{yes}$$

B. $8m + 2 = 5$

$$8\left(\frac{1}{2}\right) + 2 \stackrel{?}{=} 5$$

$$4 + 2 \stackrel{?}{=} 5$$

$$6 \neq 5 \quad \text{no}$$

C. $5 - 2m = 3$

$$5 - 2\left(\frac{1}{2}\right) \stackrel{?}{=} 3$$

$$5 - 1 \stackrel{?}{=} 3$$

$$4 \neq 3 \quad \text{no}$$

D. $16m = 8$

$$16\left(\frac{1}{2}\right) \stackrel{?}{=} 8$$

$$8 = 8 \quad \text{yes}$$

Aug 30-2:57 PM

Use Mental Math to Solve an Equation.

a. $x + 4 = 10$

$$x = 6$$

$$6 + 4 = 10$$

b. $20 - y = 8$

$$y = 12$$

$$20 - 12 = 8$$

c. $8n = 24$

$$n = 3$$

$$8 \cdot 3 = 24$$

d. $\frac{a}{5} = 9$

$$a = 45$$

$$\frac{45}{5} = 9$$

Jan 9-11:26 AM

Classwork: p.24 #2 - 34 even
Copy the question.

Put with p.18

Aug 21-4:15 PM