Name: L.o 2

Basic Algebra Vocabulary

In algebra, a **variable** is an unknown quantity. It is often represented by a letter. With a red crayon, circle the variables (or unknown amount) in each of the expressions below.

$6 + x$ $\quad y - 9$ $\quad 8z$ $\quad 16v$

A **constant** is a quantity with a value that does not change. It is usually represented by a number. With a blue crayon, circle the constants (or numerical amounts) in each of the expressions below.

$4 + n$ $\quad d - 9$ $\quad 2 - m$ $\quad 5 + a$

An **expression** is a mathematical phrase with constants, variables, and/or operation symbols. Below each expression, tell what operation is used. Write addition, subtraction, division, or multiplication.

6 m

$y - 3$	$6m$	$7 + n$	$\frac{9}{b}$ $\frac{7}{5} = 1\frac{2}{5}$
subtract	multiply	addition	division

An **equation** is a mathematical statement that uses an equal sign to show that two or more expressions are equal. Tell whether each item below is an equation or expression.

$9 - n = 15$	$\frac{9}{b}$	$2c = 4$	$8 + a$
equation	expression	equation	expression

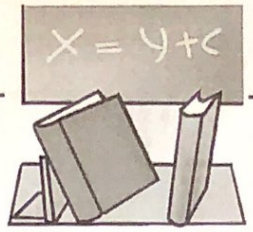
$2 + x = 12 + 7$

Is the mathematical statement shown above an equation or an expression? equation

How many variables are in this statement? 1 How many constants? 3

Name: L02

Basic Algebra



Solve

Evaluate each expression.

a = 3,	b = 5,	c = 6

1. $a + 5$ (3) — 8
2. $15 - c$ (6) — 9
3. $4b$ (5) — 20
4. $\frac{18}{c}$ — 3
5. $20 - a = 17$ (3) — 17
6. $11b$ (5) — 55
7. $\frac{45}{b}$ — 9
8. $a - 2$ — 1
9. $a + b + c$ — 14
10. $\frac{c}{a} = \frac{6}{3}$ — 2

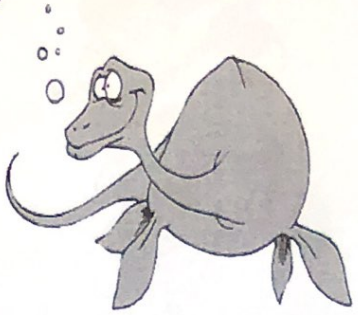
p = 12,	q = 2,	r = 30

11. $q50$ (2) — 100
    $2 \times 50 = 100$
12. $\frac{r}{q} = \frac{30}{2}$ — 15
13. $p + 4 + 6$ — 22
    $P = 12$
    $12 + 4 = 16$ $16 + 6 = 22$
14. $p - 7$ — 5
    $P = 12 - 7 = 5$
15. $10r$ — 300
    $10 \times 30 = 300$
16. $\frac{r}{10} = \frac{30}{10}$ — 3
17. $\frac{p}{4} = \frac{12}{4}$ — 3
18. $r - p$ — 18
    $r = 30$ $30 - 12 = 18$
    $P = 12$
19. $r - q$ — 28
    $30 - 2 = 28$
20. $\frac{48}{p} = \frac{48}{12}$ — 4
    $P = 12$

Now try this: Write five of your own algebraic expressions on the back of this paper. Have a friend solve them.

Name: L02

Basic Algebra



Determine the value of the variable in each equation.

1. $6 + a = 12$

   $a =$ 6 (a = 6)

2. $7 - b = 2$ (b = 5)

   $b =$ 5

3. $11 + 14 = c$

   $c =$ 25

4. $\frac{24}{d} = 3$

   $d =$ 8

5. $10e = 110$

   $e =$ 11

6. $\frac{f}{7} = 7$

   $f =$ 49

7. $13g = 26$

   $g =$ 2

8. $35 - h = 10$

   $h =$ 25

9. $6 + i = 23$

   $i =$ 17

10. $j - 17 = 7$

    $j =$ 10

11. $\frac{42}{7} = k$

    $k =$ 6

12. $4m = 32$

    $m =$ 8

13. $\frac{72}{n} = 9$

    $n =$ 8

14. $33 + 66 = p$

    $p =$ 99

15. $\frac{q}{8} = 5$

    $q =$ 40

★ $5 + r = 14 - 3$

$r =$ 6

★ $11 + 4 = 3s$

$s =$ 15

Name: L07

Basic Algebra

Determine the value of the variable in each equation.

1. $a + 5 = 9$

   $a =$ 4

2. $15 - c = 12$

   $c =$ 3

3. $9 + 15 = y$

   $y =$ 24

4. $\frac{45}{d} = 5$

   $d =$ 9

5. $10z = 100$

   $z =$ 10

6. $\frac{t}{7} = 8$

   $t =$ 56

7. $6b = 66$

   $b =$ 11

8. $20 - g = 6$

   $g =$ 14

9. $3 + r = 18$

   $r =$ 15

10. $v - 14 = 26$

    $v =$ 40

11. $\frac{48}{4} = m$

    $m =$ 12

12. $3s = 9$

    $s =$ 3

13. $\frac{16}{h} = 1$

    $h =$ 16

14. $15 + 12 = q$

    $q =$ 27

15. $\frac{121}{j} = 11$

    $j =$ 11

★ $4 + f = 13 - 2$

$f =$ 7

★ $5 + 3 = 4d$

$d =$ 2

LO2

7/12 -5

Estimate by rounding. *(Lesson 2.2)*

45. 41 × 58 40 × 60 = 2,400

46. 297 × 32 300 × 30 = 9,000

1000 × 20

47. 1,087 × 21 1,100 × 20 = 22,000

48. 4,975 × 78 5,000 × 80 = 400,000

Multiply. *(Lesson 2.3)*

49. 19 × 10^2 = 1,900

50. 186 × 10^2 = 18,600

51. 65 × 10^3 = 65,000

52. 154 × 10^3 = 154,000

Multiply. Estimate to check if your answers are reasonable. *(Lesson 2.4)*

53. 82 × 45 = 3,700

~~80 × 40 = 3,200~~

All you need to do is so... 82 × 45

54. 78 × 21 = 1,600

~~80 × 20 = 1,600~~

78 × 21

55. 275 × 59 = 18,000

~~300 × 60 = 18,000~~

275 × 59

56. 738 × 96 = 70,000

~~700 × 100 = 70,000~~

738 × 96