

1-1 Using Variables

Algebraic Expressions

Variable - letter represents any number
vary

Expression \rightarrow mathematical relationship without an equal sign.

$\$2d$ \swarrow indicates number of donuts eaten

$\$2(12) = \24

$\$2d$

$\$2d$

$\$2(18) = \36

$\$2d$

$\$2(23) = \46

A number increased by 5
+

$\$2d$

$\$2(3) = \6

$x + 5$

$b + 5$

A number divided by 9.

$x \div 9$

$x / 9$

Variable Equations

A number multiplied by 12 is 84
 y * 12 = 84

$$y * 12 = 84 \text{ or } 12y = 84$$

(+) plus, add, increased by,
greater than, SUM

The sum of b and 8
 $b + 8$

(-) minus, subtract, difference,
take away (from), less than
decreased by

Difference between (X) and (7)
 $x - 7$

5 less than d
 $d - 5$

$$L(IV) \rightarrow IV = 4$$

Nate has 10 less friends than Elena

$$E - 10 = N \quad E - 10$$

$$10 - 10 = \cancel{0}$$

from switch order

(*) Multiplication, times, product
"of" "by" twice (*2)

Product of a and c
* $a * c$ ac

5 more than the product of 2 and h
+ $\boxed{5 + (2 * h)}$ $5 + 2h$
 $(2 * h) + 5$ $2h + 5$

(÷) Division, divided by, quotient
"how many times"

Quotient of a and d
 $\boxed{a \div d}$ a/d

1.) 7 increased by x $x + 7$ or $\boxed{7 + x}$

3.) 10 decreased by m $\boxed{10 - m}$

5.) the product* of 2 and g $\boxed{2 * g}$ $2g$

11.) difference of 8 and g $\boxed{8 - g}$

13.) the product of 12 and y $\boxed{12 * y}$ $12y$

15.) 10 plus the quotient of x and 15 $\boxed{10 + (x \div 15)}$

* 8 less than the sum of 2 and d
 $\boxed{(2 + d) - 8}$

1-2 Exponents and Order of Operations

PEMDAS

Parenthesis

Exponents

MD Mult/Division $L \rightarrow R$

AS Add/Subtraction $L \rightarrow R$

$$2 + 4 * 2^3$$

$$2^3 \leftarrow \text{exponent}$$

$$2^3 = 2 * 2 * 2$$

$$4 * 2 = 2 + 2 + 2 + 2$$

$$2 + 2 + 2 + 2 * 2$$

$$2 + 4 * 2 * 2 * 2$$

$$2 + 2 + 2 + 2 + 2 * 2 * 2$$

$$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 * 2$$

$$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$$

4 6 8 10 12 14 16 18 20 22 24 26 28 30 32

34

$$\left\{ \begin{array}{l} 2 + 4 * 2^3 \\ \quad \downarrow \\ 2 + 4 * 8 \\ \quad \quad \quad \downarrow \\ 2 + 32 = 34 \end{array} \right.$$

$$2^3 = 2 * 2 * 2 = 8$$

(P) wrapped gift



E xponents - advanced form
multiplication

(MD) multiplication - advanced form
of addition

AS

$$24 \div 12 * 2$$

$$24 \div 12 * 2$$

$$2 * 2 = 4$$

~~$$24 \div 12 * 2$$
$$24 \div 24 = 1$$~~

$$24 \div 12 * 2$$

↓↓↓

$$24 * \frac{1}{12} * 2$$

$$\frac{24}{12} = 2$$

$$2 * 2 = 4$$

$$\frac{2}{3} \div \left(\frac{3}{4}\right) = \text{inverse}$$

↓↓ flip

$$\frac{2}{3} * \frac{4}{3} = \frac{8}{9}$$

$$18 - 10 + 2$$

$$18 - 10 + 2$$

$$8 + 2 = 10$$

$$18 - 10 + 2$$

$$18 - 12 = 6$$

$$18 - 10 + 2$$

$$8 + 2 = 10$$

$$18 - 10 + 2$$

$$18 + (-10) + 2$$

P
E
MD
AS

$$5.) (5 * 3) - 18$$

$$15 - 18 = (-3)$$

→ P
E
MD
AS

$$7.) 2 * (27 - 13 * 2)$$

$$2 * (27 - 26)$$

$$2 * (1) = (2)$$

$$9.) 18 \div (9 - 15 \div 5)$$

$$\rightarrow 18 \div (9 - 3)$$

$$18 \div 6 = (3)$$

$$11.) 2 * 8 - 6^2$$

$$2 * 8 - 36$$

$$16 - 36 = (-20)$$

$$7a - 4(b + 2)$$

$$7(5) - 4(2 + 2)$$

$$7(5) - 4(4)$$

$$35 - 4(4)$$

$$35 - 16 = (19)$$

$$a = 5 \quad b = 2$$

Quiz 1 due sep 22nd
 Online HW 2 (Thurs)
 Quiz 2 due Sep 29th
 HW Paper ch 1.1 events
 1.2 events

