

Variable - letter or character that substitutes for an unknown value

Algebraic Expression

variable \rightarrow $d + 8$ $d = 10$
 $10 + 8 = 18$

$d + 8$ $d = 5$
 $10 + 5 = 15$

Math is another language

A number increased by 5

$a + 5$

expression

$a + 5$

could be anything

equation

$a + 5 = 10$

equal sign

set answer equal sign

A number divided by 9

$x \div 9$

or

$\frac{x}{9}$ ← numerator
 ← denominator

Operations

⊕ Add, plus, more than, greater than, increased by, altogether, combined, SUM

⊖ subtract, minus, less than, decreased by
Difference "from"

The difference of a number and 12
subtract minus in order

$$\boxed{x - 12}$$

5 less than a number

$$8 - 5 = 3$$

switch order "from"
 $\boxed{n - 5}$

⊗ times, multiply, product

÷ divided by quotient

$$\begin{array}{r} \bullet \\ \hline \bullet \end{array}$$

numerator
denominator

(X-3) the quantity of a number decreased by 3

- 1.) A number increased by 5 $x+5$
- 2.) 8 subtracted from a number $n-8$
- 3.) 3 less than 5 times a number $5n-3$ (coefficient)
- 4.) A number multiplied by 12 is 84 $x * 12 = 84$ $12x = 84$
- 5.) 7 less than n is 22 $n-7=22$
- 6.) The product of 2 and a number $2 * n$ $2n$
- 7.) n less than 5 more than b $b+5-n$ $(5+b)-n$
- 8.) 10 greater than the quotient of a number and 15 $\frac{x}{15} + 10$ $(x \div 15) + 10$

1-2 order of operations

P E M D A S

- P parenthesis
- E exponents
- MD equally important
Mult/Div
Left \rightarrow Right
- AS equally important
Add/Sub
Left \rightarrow Right

$$2 + 3 * 4^2$$

Exponent - series
multiplication

$$2 + 3 * [4 * 4]$$

Multiplication - series
addition

$$2 + 3 * [4 + 4 + 4 + 4]$$

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

6 10 14 18 22 26 30 34 38 42 46 50

$$2 + 3 * 4^2$$

P
E
~~MD~~
AS

$$2 + 3 * 16$$

$$2 + 48 = \boxed{50}$$

$$48 \div 12 * 3$$

↕

$$48 * \frac{1}{12} * 3$$

$$48 \div 12 * 3$$

~~~~~

$$4 * 3 = 12$$

P  
E  
MD  
AS

$$20 - 8 + 4$$

↓

$$20 + (-8) + 4$$

$$20 - 8 + 4$$

~~~~~

$$12 + 4 = \boxed{16}$$

$$2 \cdot (27 - 13 \cdot 2)$$

P

F

$$2 \cdot (27 - 26)$$

MD

$$2 \cdot (1) = \boxed{2}$$

AS

$$2 \cdot ([27 - 13] \cdot 2)$$

$$2 \cdot (14 \cdot 2)$$

$$1.) \quad 50 \div 2 + 15 * 4$$

$$2 \cdot (28) = \boxed{56}$$

$$25 + 15 * 4$$

$$25 + 60 = \boxed{85}$$

$$2.) \quad 4 + 8 \div 2 + 6 * 3$$

$$4 + 4 + 6 * 3$$

$$4 + 4 + 18 = \boxed{26}$$

$$8 + 18$$

$$3.) \quad 14 + 6 * 2^3 - 8 \div 2^2$$

$$14 + 6 * 8 - 8 \div 4$$

$$14 + 48 - 8 \div 4$$

$$14 + 48 - 2$$

$$62 - 2 = \boxed{60}$$

$$4.) \quad 4^2 + 5^2 (8 - 3)$$

$$4^2 + 5^2 (5)$$

$$16 + 25 (5) *$$

$$16 + 125 = \boxed{141}$$

~~P~~

E

MD

AS

