

BE-Alg. 2 | Friday 8-14-09

Simplify:

① $[2(10-4)^2 + 3] \div 5$

② $[384 - 3(7-2)^3] \div 3$

Evaluate: $X = 8$ and $y = 1.5$

③ $X^2 - y(x+y)$

④ Name four common grouping symbols.

⑤ What is a formula? What is the formula for the area of a circle?

$\overrightarrow{PE}(\overrightarrow{MD})(\overrightarrow{AS})$ $\overrightarrow{PE}(\overrightarrow{DM})(\overrightarrow{SA})$ ALSO correct, why?

① ② ③ ④

How TO SHOW WORK: circle original problem

↓
WORK

ANSWER

EX ③ $X = 8$ $y = 1.5$ or $\frac{3}{2}$

$$X^2 - y(x+y)$$

$$(\quad)^2 - (\quad)[9.5]$$

$$(8)^2 - (\frac{3}{2})[\frac{19}{2}] = 64 - \frac{57}{4}$$

$$\frac{256}{4} - \frac{57}{4} = \boxed{\frac{199}{4}} = 49.75 \checkmark$$

grouping $(), [], \{ \}, _$ Formula

A MATHEMATICAL EXPRESSION THAT SHOWS A RELATIONSHIP BETWEEN CERTAIN QUANTITIES.

$$\textcircled{\text{EX}} \quad A_{\odot} = \pi r^2$$

$$A_{\square} = b h$$

$$A_{\Delta} = \frac{1}{2} b h$$

$$A_{\square} = \frac{1}{2} (b_1 + b_2) h$$

SETS of numbers

 $\{ \dots, -3, -2, -1, 0, 1, 2, 3, \dots \}$ integers

 $\{ 1, 2, 3, \dots \}$ NATURAL

 $\{ 0, 1, 2, 3, \dots \}$ WHOLE

 $\left\{ \frac{m}{n} \right\}$ WHEN m, n ANY integers, $n \neq 0$ } RATIONAL
 $\left\{ \begin{array}{c} \text{terminating} \\ \text{or} \\ \text{repeating} \\ \text{decimals} \end{array} \right\}$ FRACTION

 $\left\{ \begin{array}{c} \text{non-term, non-repeat.} \\ \text{decimals} \end{array} \right\}$ IRRATIONAL

 $\downarrow \quad \downarrow$
NOT fraction

 $\{ \text{RATIONAL AND IRRATIONAL} \}$ REALS
NaturalWholeIrrationalReal $\mathbb{Z}$ = integers $\mathbb{Q}$ = RATIONAL

Name Each Property of Real Numbers

Addition

$$a + b = b + a$$

$$(a + b) + c = a + (b + c)$$

$$a + 0 = a$$

or

$$0 + a = a$$

$$a + (-a) = 0$$

or

$$a - a = 0$$

or

$$-a + a = 0$$

ADD/subtracts
UNDO each other

Multiplication

$$ab = ba$$

$$(ab)c = a(bc)$$

$$a \cdot 1 = a$$

or

$$1 \cdot a = a$$

$$a\left(\frac{1}{a}\right) = 1$$

or

$$\frac{1}{a}(a) = 1$$

MULTIPLY/divides
UNDO each other

$$a(b + c) = ab + ac$$

or

$$(b + c)a = ba + ca$$

COMMUTATIVE Prop. of $+$, $\cdot$

ASSOCIATIVE Prop. of $+$, $\cdot$

IDENTITY Prop. of $+$, $\cdot$

INVERSE Prop. of $+$, $\cdot$

Distributive
Property of
MULTIPLICATION
OVER
ADDITION

{DP}

CAN ONLY combine (Add or subtract)
"like" terms.

Like terms same variables) AND
all variables have same exponents.

$$\textcircled{\text{EX}} \quad 2x^2 + 3x^2 + 5x^3 = 5x^2 + 5x^3$$

$$\textcircled{\text{EX}} \quad 3xy^2 + 2xy^2 + 6x^2y = 5xy^2 + 6x^2y$$

NUMBERS $\pm$ NUMBERS $\Rightarrow$ MAY NEED
COMMON DENOMINATION

NEVER ADD NUMBERS AND VARIABLES

$$\textcircled{\text{EX}} \quad \text{Simplify } 2(5m+n) + 3(2m-4n)$$

$$2(5m+n) + 3(2m-4n)$$

$$10m + 2n + 6m - 12n$$

$$\boxed{16m - 10n}$$

Homework: Worksheet Ch 1-1 and Ch 1-2