Algebra I

1-1

Orders of Operations, Definition of Variable

Proper Algebraic Notation

1) 7×4 → 28 $\quad 7 \cdot 4$ or $7(4)$

We don't use the x for multiply so we don't confuse it with the variable.

2) $36 \div 9$ → $\frac{36}{9} = 4$

In algebra, we usually use the fraction bar to indicate a division.

3) one and a half → $1\frac{1}{2}$ use $\frac{3}{2}$ Mr. Holm hates improper fractions.

Mazz uses mixed numbers, Mr. Puisto uses decimals, I call improper fractions.

Use what each teacher requires.

Orders of Operations

Be wary of PEMDAS or Please Excuse My Dear Aunt Sally.

There are several different grouping symbols, all of which my go first depending on which is outside and inside.

Also, My Dear makes it sound like multiplication comes before division. Not true! Left and right determines this. Same for adding and subtracting.

1) Grouping Symbols
   - a: Parentheses ( )
   - b: Brackets [ ]
   - c: Absolute Value $|3-7| = |-4| = 4$
   - d: Fraction Bar $\frac{3+7}{2} = \frac{10}{2} = 5$
2) Exponents (Powers)
3) Multiplication or Division, Left to Right
4) Addition or Subtraction. Left to Right

$24 \div 6 \cdot 2$ → 8 or 2

Simplify each expression.

1) $8 + 3 \cdot 4$ → $8 + 12$, 20

I prefer working up and down. Some like left and right. I think it is easier to correct mistakes up and down.

2) $(8 + 3)4$ → $11 \cdot 4$, 44

3) $(8 - 3) + 4$ → $5 + 4$, 9

4) $29 - (0 \cdot 9)$ → $29 - 0$, 29

Definition of Variable - A letter or a symbol the represents an unknown value, or a value that may change.

Evaluate each expression if $t = 6$, $x = 3$, $y = 4$, and $z = 5$.

5) $2x + 7$ → $2(3) + 7$, $6 + 7$, 13

6) $2(x + 7)$ → $2(3+7)$, $2(10)$, 20

7) $5(3y - 4x)$ → $5(3 \cdot 4 - 4 \cdot 3)$, $5(12 - 12)$, $5(0)$, 0

Evaluate each expression if $t = 6$, $x = 3$, $y = 4$, and $z = 5$.

8) $2[x + 4(y + z)]$ (Try on your own)

$2[3 + 4(4 + 5)]$

$2[3 + 4(9)]$ Multiply first.

$2[3 + 36]$

$2[39]$

78

126
144
92
78
216

Assignment:

Text: The Classic (1-2)
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