

Lesson 3-1 (PART II)
Order of Operations

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Parentheses

Exponents

Division/**M**ultiplication (whichever comes first)

Addition/**S**ubtraction (whichever comes first)

$$(8 + 4) \div (10 - 6) + 5^2$$

We begin with parentheses: $12 \div 4 + 5^2$

Next evaluate the exponent term $12 \div 4 + 25$

Now do multiplication and division in order $3 + 25$

Finally, add and subtract in order 28

Evaluate each expression. Check with a calculator .

1. $12 \div 4 + 2$

$$\begin{array}{l} \downarrow \\ 3 + 2 = \boxed{5} \end{array}$$

2. $6^2 \div (3 + 9) + 2(5 + 3)$

$$\begin{array}{l} 6^2 \div (12) + 2(8) \\ \downarrow \\ 36 \div 12 + 2(8) \\ 3 + 16 \\ = \boxed{19} \end{array}$$

3. $\frac{6(2+5)}{3(7)} = \frac{6(7)}{3(7)} = \frac{6}{3} = \boxed{2}$

Substitute the given value for the variable and evaluate the expression. $x = 4$, $y = 3$, $m = \frac{2}{4}$, $p = \frac{5}{2}$.

4. $3x - y$

$$\begin{array}{l} 3(4) - 3 \\ = 12 - 3 \\ = \boxed{9} \end{array}$$

5. $6p + (2y + 5x)$

$$\begin{array}{l} 6(5) + (2 \cdot 3 + 5 \cdot 4) \\ 30 + (6 + 20) \\ 30 + (26) \\ = \boxed{56} \end{array}$$

6. $mxy + 2(x + y)$

$$\begin{array}{l} 2 \cdot 4 \cdot 3 + 2(4 + 3) \\ 2 \cdot 4 \cdot 3 + 2(7) \\ 24 + 14 \\ = \boxed{38} \end{array}$$

7. $2x^2 + y^3$

$$\begin{array}{l} 2(4^2) + 3^3 \\ 2(16) + 27 \\ 32 + 27 \\ = \boxed{59} \end{array}$$