1.4

Algebra 2

Evaluating Using Order of Operations

Goal: You will use the order of operations to evaluate expressions.

Please Excuse My Dear Aunt Sally

PEMDAS

P - Parentheses (or any grouping symbol such as { }, [ ])
E - Exponents
M, **D** - Multiply or Divide, whichever comes first from left to right
A, **S** - Add or Subtract, whichever comes first from left to right

Ex 1 $6 + 12 \div 3 \cdot 4^2$

$6 + 12 \div 3 \cdot 16$

$6 + 4 \cdot 16$

$6 + 64$

$\boxed{70}$

Ex 2

Simplify $\frac{2b^2 + a}{c - a}$ When $a=2$ $b=3$ $c=6$

$$\frac{2 \cdot 3^2 + 2}{6 - 2} = \frac{18+2}{6-2} = \frac{20}{4}$$

5

Try this:

Simplify $\dfrac{4x^2 - 3y}{z^3 + 1}$ when $x = 2$, $y = 4$, $z = 1$

$$\frac{4 \cdot 2^2 - 3 \cdot 4}{1^3 + 1} = \frac{4 \cdot 4 - 12}{1 + 1} = \frac{16 - 12}{2} = \frac{4}{2}$$

$$\boxed{2}$$

Function Notation

$y = 2x$ $\qquad$ (x, y)

$f(x) = 2x$ $\qquad$ $(x, f(x))$

$f(4) = 2(4)$ $\qquad$ $(4, 8)$

$f(4) = 8$

Ex1: Find the function values

$g(x) = x + 5$

a) $g(0)$

$g(0) = 0 + 5$

$g(0) = 5$

$(0, 5)$

b) $g(-4)$

$g(-4) = -4 + 5$

$= 1$

$(-4, 1)$

Try this: Find the function values

$f(x) = -3x^2 + 6x$

a) $f(-1)$

$f(-1) = -3(-1)^2 + 6(-1)$

$-3 \cdot 1 + -6$

$-3 + -6$

$f(-1) = -9$

$(-1, -9)$

b) $f(-4)$

$f(-4) = -3(-4)^2 + 6(-4)$

$-3 \cdot 16 + -24$

$-48 + -24$

$f(-4) = -72$

$(-4, -72)$

Homework:
Worksheet

Algebra 2 - Evaluating Order of Operations

Name: _____ Date: _____ Hr: __

Evaluate the expression when $x = -3$, $y = 5$, and $z = -6$

1) $7z^2 + y$

2) x^6

3) $6y - z^3$

4) $\frac{10x}{2z - 3}$

5) $(x + y)^2 + 3z$

6) $(-4x + 9) \div (y + 2)$

Evaluate the function $h(x) = 2x^3 - 4x + 1$ for the given value.

7) $h(-2)$

8) $h(3)$

Evaluate the function $s(x) = -x^2 + 8x - 4$ for the given value.

9) $s(-4)$

10) $s(6)$