Lesson 1.3- SWBAT evaluate polynomial expressions.

Kickoff- Simplify each the following.

1) $9.2x^2 - 3 + 2.2x - 10.3x^2 - x$

$-1.1x^2 - 1.2x - 3$

2) $\frac{1}{2}(2x^2 - 4) - 2$

$1x^2 - 2 - 2$

$1x^2 - 4$

Evaluating Algebraic Expressions

1) Replace each variable in the expression with the value given.
2) Use the Order of Operations (PEMDAS) to simplify the resulting numerical expression.

Example: * use ( )

1) Evaluate $a^2 - (ab - c)$ when $a = -2, b = 3$ *and* $c = 4$

$(-2)^2 - ((-2)(3) - (4))$

$(-2)^2 - (-6 - (4))$

$(-2)^2 - (-10)$

$4 - (-10)$

14

2) Evaluate $(b - c)^2 \div ab$ when $a = -3, b = 2$ *and* $c = -4$

$((2) - (-4))^2 \div (-3)(2) = -24$

Evaluate each expression if n = -2, p = 4 and t = 3

1) $5n^2 + p$

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

24

2) $-2.4t$

$-2.4(3)$

-7.2

Evaluate each expression if n = -2, p = 4 and t = 3

3) $3(p - n) + 4$

$3((4) - (-2)) + 4$

22

4) $p^2 \div (t - 1)$

$4^2 \div (3) - (1)$

8

Evaluate each expression if n = -2, p = 4 and t = 3

5) $\frac{(p+n)}{t^2}$

$\frac{2}{9}$

$\frac{((4) + (-2))}{(3)^2}$

6) $n - p + t$

-3

Evaluate each expression if n = -2, p = 4 and t = 3

7) $\frac{(p^2+4)}{(3t+1)}$ $= 2$

$\frac{((4)+4)}{(3(3)+1)} =$

8) $p - n^t$ $= 12$

Practice- Evaluate each of the following expressions.

1) $3x^2 + 2x - 3$ *when* $x = 2$

$3(2)^2+2(2)-3$

13

2) $2xy - 4x + 3y$ *when* $x = 5$ *and* $y = 4$

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

32

3) $3x + 3y + xy - 3x^2y$ *when* $x = 1$ *and* $y = -1$

$3(1)+3(-1)+(1)(-1)-3(1)(1)$

-4

4) $\frac{x^2-y^2}{3+xy}$ *when* $x = 4$ *and* $y = -3$

16-9

$\frac{(4)^2-(-3)^2}{3+(4)(-3)} = -\frac{7}{9}$

5) $5x - z + 2y$ *when* $x = -1$, $y = 3$ *and* $z = -2$

$5(-1)-(-2)+2(3)$

3

6) $a^2 - bc$ *when* $a = 1.2$, $b = 0.6$ *and* $c = 2.5$

$(1.2)^2-(0.6)(2.5)$

-0.6

7) $\frac{b^2-c^2}{a-2c}$ *when* $a = 2, b = 3$ *and* $c = -1$

$\frac{(3)^2-(-1)^2}{(2)-2(-1)} = 2$

8) $\frac{3}{4}x^2 + \frac{1}{2}x - 5$ *when* $x = -6$

$\frac{3}{4}(-6)^2+\frac{1}{2}(-6)-5=$

$\frac{-25}{2}$ OR -12.5

9) The radius of the base of a cylinder is 3 inches and the height is 6 inches. Find the volume of the cylinder in terms of pi.

$v = \pi r^2 h$

r h

$V = \pi(3)^2(6)$

$V = \pi 54$

Leave π alone!