Bell Ringer:

Express the value of each expression in simplest terms (see if you can simplify the larger numbers...that is, are they MULTIPLES of some smaller number within the expression):

3^4 x 27^3 $\to 3^4 \cdot (3^3)^3$

$\to 3^3 \cdot 3^3 \cdot 3^3 = 3^9$

$3^4 \cdot 3^9 = 3^{13}$

z^2 x $25x^7z$ x 5^5xy^2

$(\frac{1}{2}x)^2$ x 8xy

$25 = 5^2$

$5^2 \cdot 5^5$

$5^7x^4y^2z^3$

$\frac{1}{2}x \cdot \frac{1}{2}x = \frac{1}{4}x^2(8xy)$

$\to \frac{1}{4} \cdot 8 = \frac{8}{4} =$

2

$2x^3y$

Hwk 4:

$$3.2 \times 10^{4}$$
$$\times\ 2.5 \times 10^{6}$$

$$8 \times 10^{10} m^2$$

$$\begin{array}{r} 3.2 \\ 2.5 \\ \hline 160 \\ 64 \\ \hline 8.00 \end{array}$$

Hwk#5:

1) DISTRUBITIVE, LAW OF EXPONENTS
2) COMMUTATIVE
3) ASSOCIATIVE
4) LAW OF EXPONENTS

Hwk 6: $x^a \cdot x^b = x^{a+b}$

$(x^a)^b = x^{a \cdot b} \Rightarrow 6b$

6a) $(2^2)^4 = 2^2 \cdot 2^2 \cdot 2^2 \cdot 2^2 = 2^8$

$(x^3)^4 = x^3 \cdot x^3 \cdot x^3 \cdot x^3 = x^{12}$

***Exercise* #1:** Consider the product $(x-2)(x+5)$. It is equivalent to one of the expressions below. Determine which by substituting in two values of x to check.

	$(x-2)(x+5)$	x^2-10	$x^2+3x-10$
$x=3$	$(3-2)(3+5)$ $1\cdot 8$ 8	3^2-10 $9-10$ -1	$3^2+3(3)-10$ $9+9-10$ $18-10$ Will 8
$x=5$	$(5-2)(5+5)$ $3\cdot 10$ 30	5^2-10 $25-10$ 15	$5^2+3\cdot 5-10$ $25+15-10$ 30

Dawson

B

***Exercise* #2:** The steps in finding the product of $(x+3)(x+5)$ are shown below. Write down the justification for each step.

Step 1: $(x+3)(x+5)=(x+3)\cdot x+(x+3)\cdot 5$ Justification: D

Step 2: $(x+3)\cdot x+(x+3)\cdot 5=x\cdot x+3\cdot x+x\cdot 5+3\cdot 5$ Justification: D

Step 3: $x\cdot x+3\cdot x+x\cdot 5+3\cdot 5=x\cdot x+x(3+5)+3\cdot 5$ Justification: L o E

$$=x^2+8x+15$$

***Exercise* #3:** Write out each of the following as equivalent trinomials (an expression involving three terms).

(a) $(x+6)(x+3)$

F $x \cdot x = x^2$

O $x \cdot 3 = 3x$

I $6 \cdot x = 6x$

L $6 \cdot 3 = 18$ +

$\boxed{x^2+9x+18}$

(b) $(x-4)(x+6)$

$x(x+6)-4(x+6)$

$x \cdot x+6 \cdot x-4 \cdot x-4 \cdot 6$

$x^2+6x-4x-24$

$\boxed{x^2+2x-24}$

(c) $(x-3)(x-3)$

	x	-3
x	x^2	$-3x$
-3	$-3x$	9

$\boxed{x^2-6x+9}$

(d) $(2x+3)(3x+1)$ (e) $(3x-4)(3x+2)$ (f) $(4x-1)(x-7)$

***Exercise* #4:** Jeremy has noticed a pattern that he thinks is always true. If he picks any number and finds the product of one number larger and one number smaller than it, the result is always one less than the square of his number.

(a) Test some numbers out and see if Jeremy's pattern holds.

(b) Give an algebraic explanation that shows that Jeremy's pattern will work for any number. Use **let statements** to clearly **define** your variables.

Exercise **#5:** Which of the following expressions is equivalent to the product $(x-2)(x-4)$? Show the calculations that you use to find your choice and test using a value of x.

(1) x^2+8 (3) x^2-6x+8

(2) x^2-6x-8 (4) x^2-8