Exponent Rules Review

$a^m \times a^n = a^{m+n}$

$a^m \div a^n = a^{m-n}$

$(a^m)^n = a^{m \times n}$

$(ab)^n = a^n b^n$

$a^0 = 1$

$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$

$a^{-m} = \frac{1}{a^m}$

* these rules require multiplication, division, or powers. (NOT adding or subtracting)

Collecting "Like" Terms Review

Only terms that have the EXACT same variables after the coefficient can be grouped or collected together.

"Like" Terms 5a and 8a
6xy and 3xy and 7yx
$2x^2y^3$ and $3x^2y^3$

"Unlike" Terms 5a and $8a^2$
6x and $3x^2$
$2x^3y^2$ and $3x^2y^3$

* collecting like terms requires adding or subtracting.

Simplify by collecting Like Terms

(a) $5a + 9b - 4a - 12b$

(b) $4x^2 - 7 + 6x - 9 + 2x^2 + 8x$

No exponents changed.

Distributive Property

Expand (multiply) the following

$2(x + 5) =$

$3x\,(2x + 4) =$

$5x^2\,(-3x+1)$

Exponents changed.

Distributive Property

Expand (multiply) the following

$(x + 1)(x + 4)$

$=$

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

Bringing it all together

Expand and Simplify

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

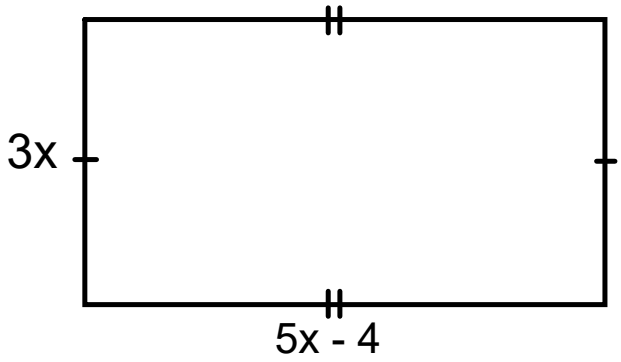
Expand and Simplify

$$2x(x-1) - 3x(x-2)$$

Expand and Simplify

$$-3x^2(x^2 + 6x) + 4x(x^2 - 7x)$$

Find the expression for BOTH the (i) perimeter and (ii) the area.



What is the value of "x" when the perimeter is 56cm?

Consolidation Questions:

Grade 9 Academic: page

Pg 125 – 27
#2, 5ace, 7ac, 8bd, 9a, 10
Challenge 15ac, 16 any