Multiplying Polynomials

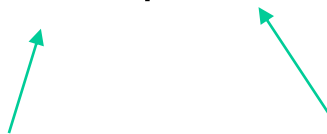$$f(x) = 5 \qquad g(x) = x + 6$$

What is the product of f(x) and g(x)?

$$(5)(x + 6)$$

$$5x + 30$$

Exponent Rules

__Sum__ of a power:

$$x^m + x^m = 2x^m$$

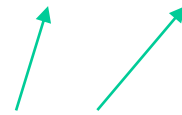If the bases AND the power are the same, we combine them.

So $x + x =$ $x^2 + x^2 =$

Exponent Rules

<u>Product</u> of a power: $\quad a^m \cdot a^n = a^{m+n}$

If the bases are the same, and we need to multiply, we just add the exponents.

So $\quad x^2 \cdot x^4 = ?$

$$(x^2)(x + 6)$$

$$x^3 + 6x^2$$

$$(-2x)(x^2 - 4x + 2)$$
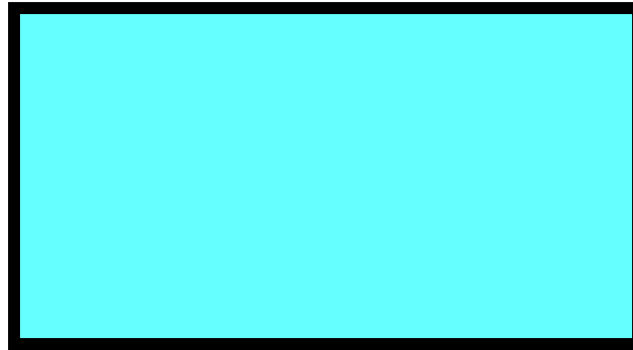
$$-2x^3 + 8x^2 - 4x$$

$$(2x + 5)(x + 6)$$

$$2x^2 + 17x + 30$$

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

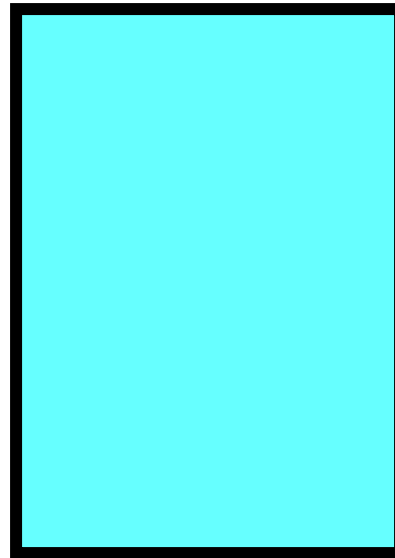$$4x^2 - 9$$

Find the perimeter of the rectangle.

$$7x + 10$$

$$4x + 8$$

22x + 36

Find the area of the rectangle.

$$x + 4$$

$$5x + 1$$

$$5x^2 + 21x + 4$$

Find the volume.

$x+6$

$x+3$

x

$$x^3 + 9x^2 + 18x$$