

### L6: Factoring using Alga-Tiles

**Scheduled Review**

Multiply and simplify any way you like

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

$$2x^2 + 10x - 3x - 15$$

$$2x^2 + 7x - 15$$

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

$$-6x^2 + 2x$$

What are the factors of 6?


$$\pm 1, \pm 2, \pm 3, \pm 6$$


So Factors are:

#s multiplied to give a specific product (6).

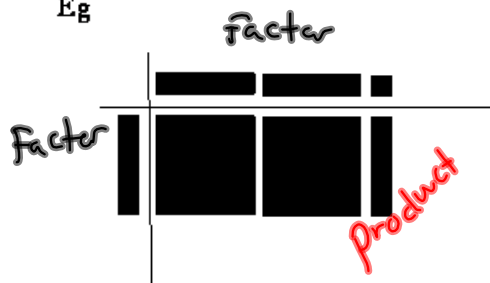
Polynomials can also have factors.

$$\blacksquare = x^2 \quad \blacksquare = x \quad \blacksquare = 1$$

 Shaded is positive

 Un-shaded is negative

Eg

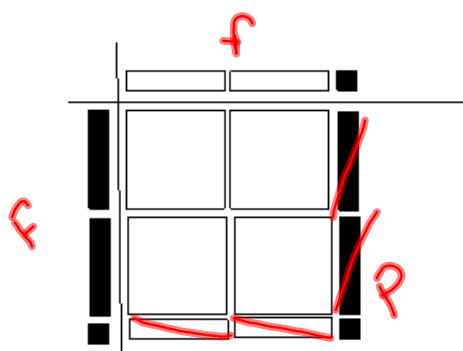


The factors are

$$x(2x+1)$$

The product is

$$2x^2 + x$$



The factors are

$$(2x+1)(-2x+1)$$

The product is

$$-4x^2 + 1$$

To Factor using algebra tiles you first start with the product. Your goal is to arrange your tiles to form a rectangle. From your rectangle you can state what your top factor and side factor are.

Factor each of the following

$$x^2 + 2x$$



$$x(x+2)$$

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



$$(x+2)(x+1)$$

$$2x^2 - 7x + 3$$

$$(2x + 1)(x + 3)$$

Sometimes you will not be able to build a rectangle. If this happens you may need to add a zero to help (hint the zero is usually with the  $x$ )

$$x^2 + x - 2$$

$$x^2 - 4$$

$$2x^2 - x - 6$$

