

• FACTORABLE TRINOMIALS.

e.g. $(x+3)(x+5) = x^2 + 3x + 5x + 15 = x^2 + 8x + 15$

Now start with $(x^2 + 8x + 15)$ and try to find its factors.

- Look for two numbers whose product is 15 and whose sum is 8. Note, don't forget the sign.

- Those two numbers are 3 and 5, so my binomials are $(x+3)$ and $(x+5)$.

$$x^2 + 8x + 15 = (x+3)(x+5)$$

↑ ↑
 add multiply
 1, 15 3, 5
 -1, -15 -3, -5

(1). $x^2 + 7x + 12$
 $= (x+3)(x+4)$

(2). $x^2 + 9x + 14$
 $= (x+2)(x+7)$

(3). $x^2 - 12x + 20$
 $= (x-2)(x-10)$

★ If the last sign in the trinomial is positive, then signs in your binomials are the same.

- | | | |
|----------|----------|---------|
| 1, 20, | 2, 10 | 4, 5 |
| -1, -20. | -2, -10, | -4, -5. |

(4). $x^2 - 2x - 35$
 $= (x-7)(x+5)$

(5). $x^2 + 4x - 12$
 $= (x+6)(x-2)$

$$(6). x^2 + 2x + 1$$

$$= (x+1)(x+1) = (x+1)^2$$

$$(7). x^2 - 8x + 16$$

$$= (x-4)(x-4) = (x-4)^2$$

← perfect square.

←

$$(8). x^2 + 3x + 5. \text{ IS PRIME}$$

BOARD WORK.

$$(1). x^2 + 11x + 24 = (x+3)(x+8)$$

$$(2). x^2 + 14x + 24 = (x+2)(x+12)$$

$$(3). x^2 + 25x + 24 = (x+1)(x+24)$$

$$(4). x^2 - 2x - 24 = (x-6)(x+4).$$

QUIZ.

$$(1). x^2 + 7x + 10 = (x+2)(x+5)$$

$$(2). x^2 - 4x - 21 = (x-7)(x+3)$$

$$(3). x^2 + 12x + 36 = (x+6)^2$$

$$(4). x^2 - 10x + 25 = (x-5)^2.$$