

T8-5

4/24/15

Factoring Trinomials $a=1$
or $LC=1$

Quadratic expression (2nd Deg Poly)

Standard Form $ax^2 + bx + c$ $a \neq 0$

$$\text{EX: } 5x^2 + 6x - 7$$

$$a=5 \quad b=6 \quad c=-7$$

$$\text{EX: } x^2 - 4x + 2$$

$$a=1 \quad b=-4 \quad c=2$$

$$\text{EX: } 2x^2 + 5x \Rightarrow 2x^2 + 5x + 0$$

$$a=2 \quad b=5 \quad c=0$$

$$\text{EX: } -7x^2 + 15 \Rightarrow -7x^2 + 0x + 15$$

$$a=-7 \quad b=0 \quad c=15$$

Put in standard form. Note a, b and c.

1. $-3x + 6 + x^2$

2. $10 - 5x + 2x^2$

3. $x^2 + 4 + 4x + 6$

4. $1 + x^2 + 7x - 6x$

5. $x^2 + 5$

6. $5x^2 + 3x$

$$ax^2 + bx + c \quad a=1$$

$$x^2 + bx + c$$

Recall:

$$\underbrace{(x+5)}_{\text{factor}} \underbrace{(x+7)}_{\text{factor}}$$

$$x^2 + \underbrace{7x + 5x}_{8+7} + \underbrace{35}_{5 \cdot 7}$$

Factoring $a=1$

Ex. $x^2 + 7x + 12$ ✓

$a=1 \quad b=7 \quad c=12$

★ $(x+3)(x+4)$

write the factors

| | |
|--------|-------------|
| 12 | 7 |
| 1 · 12 | 1 + 12 = 13 |
| 2 · 6 | 2 + 6 = 8 |
| 3 · 4 | 3 + 4 = 7 |

1. Standard form (GCF out if possible)
2. note a, b, c
3. make c | b table

List factors of c
pick the set that adds to b

Check w FOIL

$$\underbrace{(x+3)} \underbrace{(x+4)}$$

$$x^2 + \underbrace{4x + 3x} + 12$$

$$x^2 + 7x + 12 \quad \checkmark$$

4. Write your answer in factored form.
() ()
5. Verify with FOIL

EX $40 - 22x + x^2$

$$x^2 - 22x + 40$$

$a=1$ $b=-22$ $c=40$

$$(x-2)(x-20)$$

+ neg

| | |
|--------|-----|
| 40 | -22 |
| -1·40 | |
| -2·-20 | |
| -4·-10 | |
| -5·-8 | |

1. $x^2 + 6x + 8$

2. $x^2 - x - 6$