8.6 Factoring $ax^2 + bx + c$

$ax^2 + bx + c$ The **BIG** idea...

The *ac* method: For a trinomial in the form $ax^2 + bx + c$, the factors of *ac* can be used to separate the middle term so group factoring can be used.

Example: Factor $2x^2 - 3x - 20$

$ac = 2(20) = 40$

$2x^2 + 5x - 8x - 20$

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

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

$1 \cdot 40$

$2 \cdot 20$

$4 \cdot 10$

$5 \cdot 8$

Why 5 x 8? The difference is 3. The term -3x can now be rewritten as 5x - 8x.

Factor.

1) $2r^2 - 7r + 5$

2) $6z^2 + 31z + 40$

Factor.

3) $6x^2 - x - 5$

4) $20w^2 - 9w - 18$

Factor.

5) $35a^2 - 46a - 16$

6) $6p^2 + 5p - 21$