$$\boldsymbol{x^2 + 11x + 30}$$

a= 1 b=11 c=30

a*c= 1*30 =30

Factors of 30:

30,1

15, 2

10, 3

6, 5

Which combination will produce the middle term: 11x? 6, 5

Rewrite the equation using the factors:

$x^2 + 6x + 5x + 30$

Group the terms one and two and group terms three and four.

$(x^2+6x) + (5x + 30)$

Factor each group:

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

Factor out the common binomial:

$$\boldsymbol{(x + 5)\,(x + 6)}$$

$$\boldsymbol{x^2 - 4x + 4}$$

a= 1 b=-4 c=4

a*c= 1*4 =4

Factors of 4:

4,1

2, 2

Which combination will produce the middle term: -4x? (Hmm, 4 is negative.) -2 and -2

Rewrite the equation using the factors:

$x^2 - 2x \ - 2x + 4$

Group the terms one and two and group terms three and four.

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

Factor each group:

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

Factor out the common binomial:

$$\boldsymbol{(x - 2)\,(x - 2)}$$

Name _____ Date _____

Factor the trinomial where a=1

1. $x^2 + 5x + 6$	2. $y^2 + 7y + 12$
3. $a^2 + 6a + 9$	4. $m^2 + 10m + 25$
5. $x^2 + 5x - 14$	6. $p^2 + 2p - 24$
7. $x^2 - 10x + 21$	8. $x^2 + 8x + 16$