Algebra 1 8.6

Factor trinomials

Solve quadratic equations by factoring

quadratic

EWE

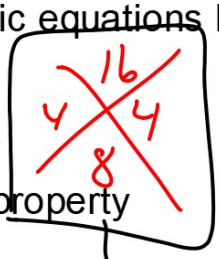
Factor

Zero product property

activity: x-factor

ICE ws

1, 16
2, 8
4, 4



$x^2 + 8x + 16$

$(x+4)(x+4)$

$(x+4)^2$

Example 1 *b* and *c* are Positive

Factor $x^2 + 9x + 20$.

20
5 4
9

$(x+5)(x+4)$

1 20
2 10
4 5

Factor each polynomial.

1A. $d^2 + 11d + 24$

1, 9

Solve 3, 3

rewrite in standard form first

1B. $9 + 10t + t^2 = 0$

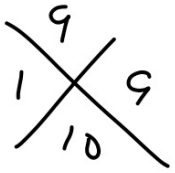
$t^2 + 10t + 9 = 0$

$(t+9)\cdot(t+1) = 0$

$t+9=0$ $\quad$ $t+1=0$

$-9\ -9$ $\quad$ $-1\ -1$

$t = -9$ $\quad$ $t = -1$



Example 2 *b* is Negative and *c* is Positive

Factor $x^2 - 8x + 12$. Confirm your answer

1 12
2 6
3 4

$(x-2)(x-6)$

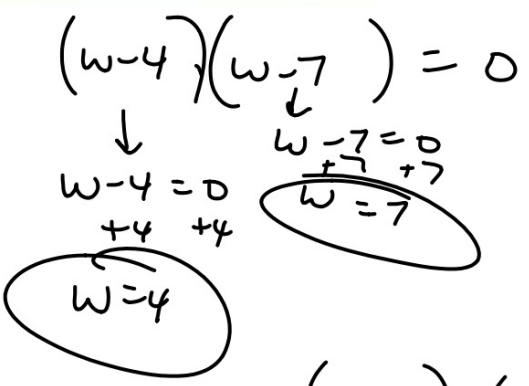
12
-2×-6
-8

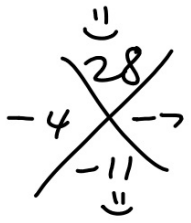
$x-2$
$x-6$

$x^2 - 6x + 12$
$-2x$

What does "confirm your answer" mean?

2B. $w^2 - 11w + 28 = 0$





1 28
2 14
4 7

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2A. $21 - 22m + m^2 = 0$ standard form

$m^2 - 22m + 21 = 0$

$(\quad)\cdot(\quad) = 0$

Example 3 c is Negative

Factor each polynomial.

a. $x^2 + 2x - 15$

b. $x^2 - 7x - 18 \quad = 0$

GuidedPractice

3A. $y^2 + 13y - 48$ =0

3B. $r^2 - 2r - 24 \quad = 0$