

Warm Up

Factor.

1) $44 - 15x + x^2$

$x^2 - 15x + 44$

$(x-11)(x-4)$

$$\begin{array}{cc} 44 & \\ -11 & -4 \\ & -15 \end{array}$$

Solve.

2) $x^2 - 9x = -14$

$+14 \quad +14$

$x^2 - 9x + 14 = 0$

$(x-2)(x-7) = 0$

$x-2=0 \quad x-7=0$

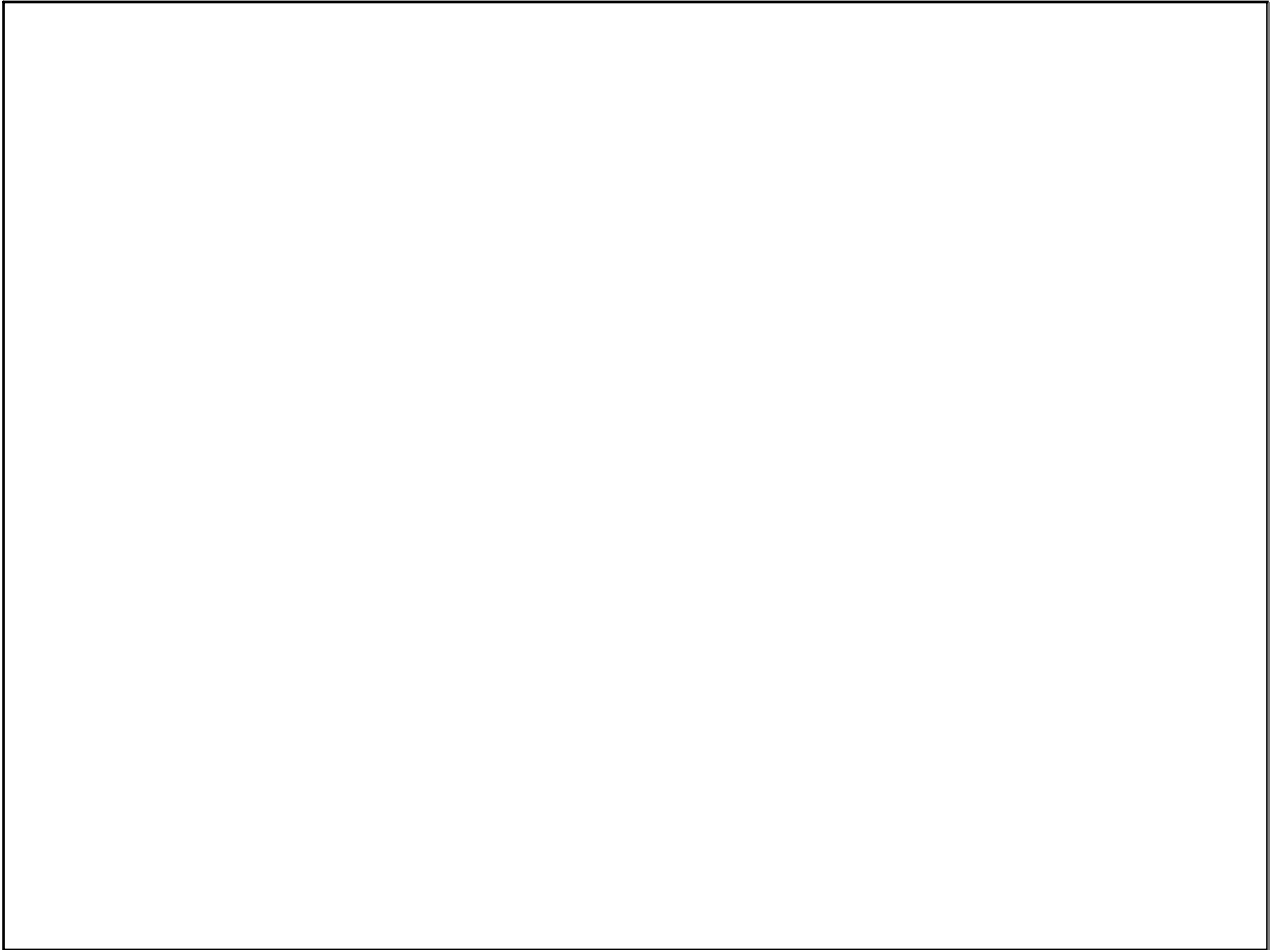
$x=2$

$x=7$

$$\begin{array}{cc} 14 & \\ -2 & -7 \\ & -9 \end{array}$$

$\begin{matrix} 1, 14 \\ 2, 7 \end{matrix}$

Homework Questions?



Self Scoring Scale

4- I can *summarize* the concepts and explain it to others.

3- I can *apply* the concepts to answer questions correctly.

2- I can *apply* the concepts but with some *mistakes*.

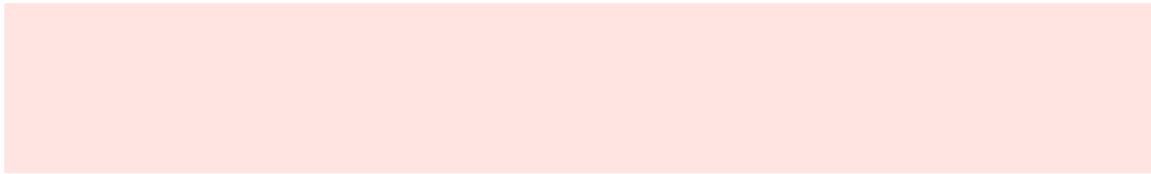
1- I *need help* to know how to apply the concepts.

0- I *can't* apply the concepts even with help.

10.6 Factoring $ax^2 + bx + c$

- Goals:**
- Factor a quadratic expression of the form $ax^2 + bx + c$.
 - Solve quadratic equations by factoring.

EQ: How do you factor $2x^2 + 11x + 5$?



Algebra 1.5		② LAST UNIT/Experience Quadratic Equations	① CURRENT UNIT Polynomials & Factoring	③ NEXT UNIT/Experience Rational Equations
⑧ Student Activities or Assignments	⑤ UNIT MAP			⑥ UNIT RELATIONSHIPS
	<ol style="list-style-type: none"> 1. 10.1 2. 10.2 3. 10.3 4. 10.4 5. 10.5 6. 10.6 7. 10.7 8. 10.8 			
⑦ UNIT SELF-TEST QUESTIONS	<ol style="list-style-type: none"> 1. When adding & subtracting polynomials, how do you combine like terms? 2. How do you use distributive property, FOIL, and diagrams to multiply polynomials? 3. What is the method for factoring trinomials? 4. How is factoring & the Zero-Product Property used to solve polynomials? 			Factor Solve Calculate Simplify

Example 1: One Pair of Factors for a and c

Factor $3x^2 + 22x + 7$.

$1, 3 = 1, 7 \leftarrow \# \text{ by itself}$
 # with x term
 $(1x + 1)(3x + 7)$
 $(1x + 7)(3x + 1) \checkmark$

Example 2: Several Pairs of Factors for a and c

Factor $8x^2 - 21x + 10$.

$1 \cdot 8 = 1 \cdot 10$
 $2 \cdot 4 \quad 2 \cdot 5$
 $(1x - 1)(8x - 10)$
 $(1x - 10)(8x - 1)$
 $(2x - 1)(2x - 10)$
 $(2x - 10)(2x - 1)$
 $(1x - 2)(8x - 5) \checkmark$
 $(x - 2)(8x - 5) \checkmark$

Example 3: A Common Factor for a, b, and cFactor $9x^2 + 42x - 15$.

$$\begin{array}{|c|} \hline 1, 9 \\ \hline 3, 3 \\ \hline \end{array} \quad \begin{array}{|c|} \hline 1, 15 \\ \hline 3, 5 \\ \hline \end{array}$$

$$(3x + 1)(3x - 15)$$

$3x$
 $-45x$

$$(3x - 1)(3x + 15) \quad \checkmark$$

$-3x$ $45x$

Summary

~~What form should your answers be in after you factor?~~

$$2x^2 + 11x + 5$$

$1, 2$ $1, 5$

$$(1x + 1)(2x + 5)$$

$2x$

$$(1x + 5)(2x + 1) \quad \checkmark$$

$5x$
 $10x$
 $1x$

10.6 Homework

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