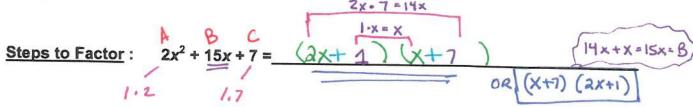
Machra	1	Notes
Algebra	1	Notes

Date:

# 9.6 Factor Quadratic Equations When the Leading Coefficient IS NOT 1 **VOCABULARY:**

- Standard Form of a Quadratic Equation  $A \times^2 + B \times + C = 0$ Where A B, C are real numbers; and A + 0
- Factoring is a lot more work when a #1

Example 1 Factor when a and c are prime number other than 1



- 1) Identify a, b, and c. a = 2 b = 15 and c = 7
- 2) Write 2 sets of ()'s. One for each factor.
- 3) What are the first terms in both factors? Why?  $\frac{\partial x \cdot x}{\partial x} = \frac{\partial x^2}{\partial x}$  (the 1st term)

  4) What are the signs for each factor? Both positive since  $\frac{\partial x}{\partial x} = \frac{\partial x}{\partial x}$
- 5) What are the factors of 2 and 7? Put them under the numbers
- 6) Draw brackets (multiply INNER TERMS, OUTER TERMS, and their sum must be B.
- 7) CHECK by Multiplying the factors

$$(2x+1)(x+7) = 2x^2+14x+x+7 = 2x^2+15x+7$$

CHECK POINT: Factor and Check by mentally multiplying

2) 
$$2x^{2} - 11x + 5 = (2x - 1)(x - 5)$$

3)  $5x^{2} + 2x - 3 = (5x - 3)(x + 1)$ 

1)  $3x^{2} - 8x - 3 = (3x + 1)(x - 3)$ 

5)  $5x^{2} + 55x + 150$ 

6)  $5x^{2} + 15x + 150$ 

6)  $5x^{2} + 15x + 150$ 

7)  $5x^{2} + 15x + 150$ 

8)  $5x^{2} + 15x + 150$ 

9)  $5x^{2} + 15x + 150$ 

### Algebra 1 Notes...

## Example 6 Factor "-1" when the leading coefficient is negative

Steps to Factor:  $-2x^2 - 11x - 5 = -1(2x^2 + 11x + 5)$ 

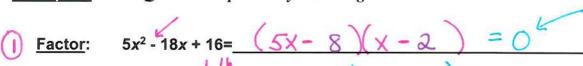
Zero

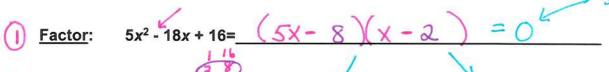
- 1) Identify a, b, and c.  $a = \frac{-2}{2}$  b=  $\frac{-1}{2}$  and c=  $\frac{-5}{2}$
- \*2) Always factor out -1 when the leading coefficient is negative.
  - 3) Factor (the final answer must include "-1")
  - 2 ANSWERS: 4) Always CHECK by Mentally multiplying the factors !!!!!!!!!!!!!!!

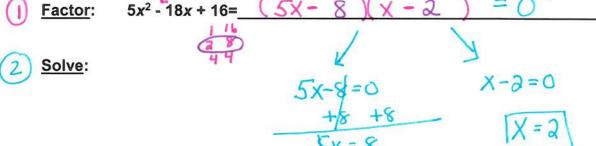
### Example 7 Factor when a and c are NOT prime numbers

- 1) Write 2 sets of ()'s. One for each factor
- What are the factors of 7 and 12? Put them under the numbers
- 3) Draw brackets
- Factor by guess and check.

### Example 8 Solve Quadratic Equation by Factoring







3) Check: 
$$x = \frac{8}{5}$$

