

1.4 → factor trinomials $a > 1$, DOTS/SOTS

Ex. 1

$$2x^2 + 11x + 9$$

$$(\cancel{2x} \quad \cancel{3})(\cancel{x} \quad \cancel{3})$$

$\underbrace{\hspace{10em}}_{6x}$
↖
↗
↘

not $11x$

$\frac{2}{2,1}$	$\frac{9}{1,9}$
$\frac{9}{3,3}$	

$$(2x + 9)(x + 1)$$

$\underbrace{\hspace{10em}}_{9x}$
↖
↗
↘

$2x$ ✓

$(2x + 9)(x + 1)$

Ex. 2

$$4x^2 + 4x - 3$$

$$(\cancel{2x} - 1)(\cancel{2x} + 3)$$

$\underbrace{\hspace{10em}}_{-2x}$

$6x$ ✓

$\frac{4}{4,1}$	$\frac{3}{3,1}$
$\frac{3}{2,2}$	

$(2x - 1)(2x + 3)$

Ex. 3

$$6x^2 - 33x + 15$$

$$3(2x^2 - 11x + 5)$$

$$3(\cancel{2x} - 1)(\cancel{x} - 5)$$

$\underbrace{\hspace{10em}}_{-1x}$

$-10x$ ✓

$\frac{2}{2,1}$	$\frac{5}{5,1}$
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$3(2x - 1)(x - 5)$

Ex. 4

DOTS - Difference of Two Squares

$$4x^2 - 49$$

- * Binomial
- * Subtraction

Ex. 5

SOTS - Sum of Two Squares

$$x^2 + 16$$
$$(x + 4i)(x - 4i)$$

Check

$$x^2 - \cancel{4ix} + \cancel{4ix} - \cancel{16i^2}$$
$$+ 16$$

✓ $x^2 + 16$

- * Binomial
- * Addition
- * Perfect Squares
- ** Include i **

$$(x + 4i)(x - 4i)$$