

Name

AK

Alg2a

December 5, 2019

Case II Mix

1)  $12x^2 + x - 6$

$$\begin{array}{l} \text{a} \quad \text{b} \quad \text{c} \quad \text{a} \cdot \text{c} \\ 12 \quad 1 \quad -6 \quad 12 \cdot -6 = -72 \\ \text{F} = -72 \\ \text{S} = +1 \\ \cancel{12x^2 + 8x} \quad \cancel{-9x - 6} \\ 12x^2 + 9x \quad -9x - 6 \\ 3x(4x+3) \quad -2(4x+3) \end{array}$$

$$(4x+3)(3x-2)$$

2)  $12x^2 - 20x - 8$

$$\begin{array}{l} \text{a} \quad \text{b} \quad \text{c} \\ 4(3x^2 - 5x - 2) \\ 4(3x^2 - 6x + x - 2) \\ 4(3x(x-2) + 1(x-2)) \end{array}$$

$$4(x-2)(3x+1)$$

$$\begin{array}{l} \text{a} \cdot \text{c} \\ 3 \cdot -2 = -6 \\ \text{F} = -6 \\ \text{S} = -5 \end{array}$$

3)  $12x^2 - 96x + 180$

$$\begin{array}{l} \text{a} \quad \text{b} \quad \text{c} \\ 12(x^2 - 8x + 15) \\ \text{F} = 15 \\ \text{S} = -8 \\ 12(x-5)(x-3) \end{array}$$

4)  $24x^2 + 216x + 432$

$$\begin{array}{l} \text{a} \quad \text{b} \quad \text{c} \\ 24(x^2 + 9x + 18) \\ \text{F} = 18 \\ \text{S} = 9 \\ 24(x+6)(x+3) \end{array}$$

5)  $24x^2 + 6x - 3$

$$\begin{array}{l} \text{a} \quad \text{b} \quad \text{c} \\ 3(8x^2 + 2x - 1) \\ \text{F} = -8 \\ \text{S} = +2 \\ 3(8x^2 + 4x - 2x - 1) \\ 3(4x(2x+1) - 1(2x+1)) \\ 3(2x+1)(4x-1) \end{array}$$

6)  $24x^2 - 19x - 5$

$$\begin{array}{l} \text{a} \quad \text{b} \quad \text{c} \\ 24x^2 + 5x - 24x - 5 \\ \text{F} = -120 \\ \text{S} = -19 \\ x(24x+5) - 1(24x+5) \\ (24x+5)(x-1) \end{array}$$

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7)  $30x^2 - 9x - 3$

$3(10x^2 - 3x - 1)$

$3(10x^2 - 5x + 2x - 1)$

$3(5x(2x-1) + 1(2x-1))$

$3(2x-1)(5x+1)$

 $a \cdot c$ 

$10 \cdot -1 = -10$

$F = -10$

$S = -3$

8)  $30x^2 + x - 7$

$30x^2 + 15x + 14x - 7$

$15x(2x+1) - 7(2x+1)$

$(2x+1)(15x-7)$

 $a \quad b \quad c$  $a \cdot c$ 

$30 \cdot -7 = -210$

$F = -210$

$S = +1$

9)  $30x^2 + 390x + 1,260$

$30(x^2 + 13x + 42)$

$30(x+6)(x+7)$

$F = 42$

$S = 13$

10)  $121x^2 - 4$

$(11x+2)(11x-2)$

11)  $64x^2 - 4$

$4(16x^2 - 1)$

$4(4x+1)(4x-1)$

12)  $400x^2 - 36$

$4(100x^2 - 9)$

$4(10x+3)(10x-3)$

13)  $100x^2 - 49$

$(10x+7)(10x-7)$

14)  $100x^2 - 25$

$25(4x^2 - 1)$

$25(2x+1)(2x-1)$

15)  $100x^2 - 625$

$25(4x^2 - 25)$

$25(2x+5)(2x-5)$