

More Decomposition.

$$6e) \quad 6x^2 - x - 12 \quad \begin{matrix} \otimes -72 \\ \oplus -1 \end{matrix}$$

$$= \underbrace{6x^2 - 9x}_{3x} + \underbrace{8x - 12}_4$$

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

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

$$\begin{array}{|c|} \hline -9, 8 \\ \hline \end{array}$$

$$7a) \quad 9x^2y^2 - 48x^2y + 48x^2$$

$$= 3x^2(3y^2 - 16y + 16) \quad \begin{matrix} \otimes 48 \\ \oplus -16 \end{matrix}$$

$$\begin{array}{|c|} \hline -4, -12 \\ \hline \end{array}$$

$$= 3x^2 \left(\underbrace{3y^2 - 12y}_{3y} - \underbrace{4y + 16}_{-4} \right)$$

$$= 3x^2 (3y(y - 4) - 4(y - 4))$$

$$= 3x^2(y - 4)(3y - 4)$$

$$7c) \quad 20x^2y^3 - 85xy^3 - 75y^3$$

$$= 5y^3(4x^2 - 17x - 15) \quad \begin{matrix} \otimes -60 \\ \oplus -17 \end{matrix}$$

$$\begin{array}{|c|} \hline 1, 60 \\ 2, 30 \\ 3, 20 \\ \hline \end{array}$$

$$= 5y^3 \left(\underbrace{4x^2 - 20x}_{4x} + \underbrace{3x - 15}_3 \right)$$

$$= 5y^3(4x(x - 5) + 3(x - 5)) = 5y^3(x - 5)(4x + 3)$$

$$8a) \quad 9k^2 - 24k + 16 \quad \begin{matrix} \textcircled{x} 144 \\ \textcircled{+} -24 \end{matrix} \quad -12, -12$$

$$= (3k - 4)^2$$

$$c) \quad \textcircled{12}x^2 - 5xy - \textcircled{2}y^2 \quad \begin{matrix} \textcircled{x} -24 \\ \textcircled{+} -5 \end{matrix}$$

$$\begin{matrix} 1, 24 \\ 2, 12 \\ 3, -8 \end{matrix}$$

$$= \textcircled{12x^2 + 3xy} - \textcircled{8xy - 2y^2}$$

$$\quad \quad \quad \textcircled{3x} \quad \quad \quad \textcircled{-2y}$$

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

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

You do 7e 8e

$$9. a) \quad 21x^2 + 17x - 30 \quad \begin{matrix} \textcircled{x} -630 \\ \textcircled{+} 17 \end{matrix}$$

$$= \textcircled{21x^2 - 18x} + \textcircled{35x - 30}$$

$$\quad \quad \quad \textcircled{3x} \quad \quad \quad \textcircled{+5}$$

$$= 3x(7x - 6) + 5(7x - 6)$$

$$= (7x - 6)(3x + 5)$$

$$c) \quad 15x^2 - 28x - 32 \quad \begin{matrix} \textcircled{x} -480 \\ \textcircled{+} -28 \end{matrix}$$

$$= \textcircled{15x^2 - 40x} + \textcircled{12x - 32}$$

$$\quad \quad \quad \textcircled{5x} \quad \quad \quad \textcircled{+4}$$

$$= 5x(3x - 8) + 4(3x - 8)$$

$$= (3x - 8)(5x + 4)$$

$$\begin{matrix} 1, 480 \\ 2, 240 \\ 3, 160 \\ 4, 120 \\ 5, 96 \\ 6, 80 \\ 10, 48 \end{matrix}$$

$$\begin{matrix} 1, 630 \\ 2, 315 \\ 3, 210 \\ 5, 126 \\ 6, 105 \\ 7, 90 \\ 9, 70 = \textcircled{61} \\ 14, 45 \\ 15, 42 \end{matrix}$$

$$\textcircled{-18, 35}$$

$$\textcircled{12, -40}$$

$$9) 3 - 26xy + 35x^2y^2$$

$$\textcircled{X} 105$$

$$\textcircled{+} -26$$

$$1, 105$$

$$3, 35$$

$$-5, -21$$

$$= \underbrace{3 - 21xy}_{3} - \underbrace{5xy + 35x^2y^2}_{-5xy}$$

$$= 3(1 - 7xy) - 5xy(1 - 7xy)$$

#10 ac

$$= (1 - 7xy)(3 - 5xy)$$

Homework: 7 baf, 8 baf, 9 baf, 10 bd