

back of outline

Feb. 17

Decomposition

Classwork a/c/e of each
homework b/d/f of each

1a. Factor

$$2x^2 + 11x + 12$$

$$\begin{array}{r} \times 24 \\ + 11 \end{array}$$

$$= \underbrace{2x^2 + 3x}_{x \quad x} + \underbrace{8x + 12}_{4 \quad 4} \quad 3, 8$$

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

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

$$= 2x^2 + 8x + 3x + 12$$
$$= 2x^2 + 11x + 12$$

b

$$2k^2 + 3k + 1$$

$$= \underbrace{2k^2 + k}_{k \quad k} + \underbrace{2k + 1}_{1 \quad 1}$$

$$= k(2k + 1) + 1(2k + 1)$$

$$= (2k + 1)(k + 1)$$

$$\begin{array}{r} \times 2 \\ + 3 \\ 1, 2 \\ 2, 1 \end{array}$$

2a

$$6x^2 + 11x + 3$$

$$\begin{array}{r} \times 18 \\ + 11 \end{array}$$

$$= \underbrace{6x^2 + 9x}_{3x \quad 3x} + \underbrace{2x + 3}_{1 \quad 1}$$

$$\begin{array}{r} + 11 \\ 9, 2 \end{array}$$

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

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

$$d) 2x^2 + 13x + 15$$

le

$$2x/e$$

$$3a) 2m^2 - 11m + 12 \quad \begin{array}{l} \times (24) \\ + (-11) \end{array}$$

$$= \underbrace{2m^2 - 3m}_{m \quad m} - \underbrace{8m + 12}_{-4 \quad -4} - 3, -8$$

$$= m(2m-3) - 4(2m-3)$$

$$= (2m-3)(m-4)$$

$$3c) 3x^2 - 14x + 8 \quad \begin{array}{l} \times 24 \\ - 14 \end{array}$$

$$= \underbrace{3x^2 - 2x}_{x \quad x} - \underbrace{12x + 8}_{-4 \quad -4} - 14$$

$$= x(3x-2) - 4(3x-2) \quad \begin{array}{l} 1, 24 \\ 2, 12 \end{array}$$

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

$$e) 6x^2 - 19x + 10 \quad \begin{array}{l} \times 60 \\ + (-19) \end{array}$$

$$= \underbrace{6x^2 - 4x}_{2x \quad 2x} - \underbrace{15x + 10}_{-5 \quad -5} - 19$$

$$= 2x(3x-2) - 5(3x-2) \quad \begin{array}{l} 1, 60 \\ 2, 30 \\ 3, 20 \\ -4, -15 \end{array}$$

$$= (3x-2)(2x-5)$$

$$\begin{array}{r} \times 24 \\ \hline 1,24 \\ - 2,12 \\ \hline \end{array}$$

3ba f

