

## Notes - Subtracting Polynomials

Ex 1: Simplify the expression.

$$\begin{aligned} & (3x + 8) - 1(4x - 12) \\ &= ((3x) + 8) + ((-4x) + 12) \\ &= -1x + 20 \end{aligned}$$

Ex. 2: Simplify.

$$\begin{array}{r} (2x^2 + 6x - 4) - (-7x + 9) \\ 2x^2 + 6x - 4 \\ - \quad \downarrow \quad -7x + 9 \\ \hline 2x^2 + 13x - 13 \end{array}$$

Ex. 3: Simplify.

$$\begin{aligned} & \frac{1}{3} (3x^2 - 9x + 15) - 1(4x^2 - 6) \\ & (1x^2 - 3x + 5) + (-4x^2 + 6) \\ & \begin{array}{r} 1x^2 - 3x + 5 \\ + \quad -4x^2 + 0x + 6 \\ \hline -3x^2 - 3x + 11 \end{array} \end{aligned}$$

Ex. 4:  $(\frac{3}{4}x + 6) - 1(\frac{5}{4}x - 14)$

$$= (\frac{3}{4}x + 6) + (-\frac{5}{4}x + 14)$$

$$\frac{3}{4} + \frac{-5}{4} = \frac{-2}{4} = \frac{-1}{2}$$

$$= \frac{-1}{2}x + 20$$

Ex. 5: Simplify:

$$-4(-5x^2 + 3x - \frac{1}{2}) - 1(-3x^2 + 5x + 17)$$

$$= (20x^2 - 12x + 2) + (3x^2 - 5x - 17)$$

$$= 20x^2 - 12x + 2$$

$$+ 3x^2 - 5x - 17$$

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$$23x^2 - 17x - 15$$