

Warm-up 3/25

Simplify.

$$a. (3x^3 - 5x + x^4 - 1) - (2x^3 - 3x - 7)$$

$$(3x^3 - 5x + x^4 - 1) - (-2x^3 + 3x + 7)$$

$$\begin{array}{r} x^4 + 3x^3 - 5x - 1 \\ - 2x^3 + 3x + 7 \\ \hline x^4 + x^3 - 2x + 6 \end{array}$$

$$b. \frac{5x(x-3)}{5x^2 - 15x} \leftarrow$$

$$c. (2x+1)(5x+7)$$

$$2x(5x+7) + 1(5x+7)$$

$$10x^2 + 14x + 5x + 7$$

$$10x^2 + 19x + 7$$

$$\text{Solve } \begin{cases} 3x + \frac{6}{2y} = 14 \xrightarrow{3} \\ 4x - 3y = 13 \xrightarrow{2} \end{cases}$$

$$4 \cdot 4 - 3y = 13$$

$$16 - 3y = 13$$

$$\begin{array}{r} 16 \\ -16 \\ \hline -3y = -3 \end{array}$$

$$\frac{-3y}{-3} = \frac{-3}{-3} \quad y = 1$$

$$9x + 6y = 42$$

$$8x - 6y = 26$$

$$\begin{array}{r} 17x = 68 \\ \hline 17 \quad 17 \end{array}$$

$$x = 4$$

$$(4, 1)$$

More examples
Find each product

$$a. \quad 4(x+2) = 4x + 8$$

$$b. \quad x(1-x) = x - x^2$$

$$c. \quad 5x(3x+7) = 15x^2 + 35x$$

$$d. \quad (x-1)(x-2)$$

$$x(x-2) - 1(x-2)$$

$$x^2 - 2x - 1x + 2$$

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

$$e. \quad (x+5)(x-7)$$

$$x(x-7) + 5(x-7)$$

$$x^2 - 7x + 5x - 35$$

$$x^2 - 2x - 35$$