


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



$$\begin{aligned} &= x(5x^3 - 3x^2 + 4) + 2(5x^3 - 3x^2 + 4) \\ &= 5x^4 - 3x^3 + 4x + 10x^3 - 6x^2 + 8 \\ &= 5x^4 + 7x^3 - 6x^2 + 4x + 8 \end{aligned}$$

Apply the distributive law.

Apply the distributive law again.

Combine like terms.

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

$$\begin{aligned} &= (x - 3)(x^2 - 2x - 8) \\ &= x(x^2 - 2x - 8) - 3(x^2 - 2x - 8) \\ &= x^3 - 2x^2 - 8x - 3x^2 + 6x + 24 \\ &= x^3 - 5x^2 - 2x + 24 \end{aligned}$$


Multiply two of the factors first.

Apply the distributive law.

Apply the distributive law again.

Combine like terms.