

To multiply a polynomial by a monomial, distribute the monomial to each of the terms in the polynomial. Remember to multiply coefficients and add exponents.

$$\begin{aligned} -x^2(3x^2 - 2x - 4) &= -x^2(3x^2) + (-x^2)(-2x) + \\ &(-x^2)(-4) = -3x^4 + 2x^3 + 4x^2 \end{aligned}$$