

$$9) (2x-3)^4$$

$${}_4C_0 (2x)^4 (-3)^0 = 1 \cdot 2^4 x^4 \cdot 1 = 16x^4$$

$${}_4C_1 (2x)^3 (-3)^1 = 4 \cdot 2^3 x^3 \cdot (-3) = -96x^3$$

$${}_4C_2 (2x)^2 (-3)^2 = 6 \cdot 2^2 x^2 \cdot 9 = 216x^2$$

$${}_4C_3 (2x)^1 (-3)^3 = 4 \cdot 2x \cdot (-27) = -216x$$

$${}_4C_4 (2x)^0 (-3)^4 = 1 \cdot 1 \cdot 81 = 81$$

$$\text{answer: } 16x^4 - 96x^3 + 216x^2 - 216x + 81$$

$$(-3)^0 \quad | \quad (2x)^4 (-3)^0 = 16x^4$$

$$(-3)^1 \quad | \quad | \quad 4 \quad (2x)^3 (-3)^1 = -96x^3$$

$$(-3)^2 \quad | \quad 2 \quad | \quad 6 \quad (2x)^2 (-3)^2 = 216x^2$$

$$(-3)^3 \quad | \quad 3 \quad 3 \quad | \quad 4 \quad (2x)^1 (-3)^3 = -216x$$

$$(-3)^4 \quad | \quad 4 \quad 6 \quad 4 \quad | \quad 1 \quad (2x)^0 (-3)^4 = 81$$

$$\text{answer: } 16x^4 - 96x^3 + 216x^2 - 216x + 81$$