

Simplify:

$$(1) \quad 4x(2x^2 + 3x)$$

$$= 8x^3 + 12x^2$$

$$(2) \quad m^2n^5(4m^5 - mn^3)$$

$$= 4m^7n^5 - m^3n^8$$

$$(3) \quad (6k^3 - 3k^5)(5k^3)$$

$$= (5k^3)(6k^3 - 3k^5)$$

$$= 30k^6 - 15k^8$$

$$(4) \quad (x^7 - 5xy^4)(-2x^3y)$$

$$= (-2x^3y)(x^7 - 5xy^4)$$

$$= -2x^{10}y + 10x^4y^5$$

$$(5) \quad 2ab(2a^2b + 5a^2b^2) - 4a^2b^2(3ab + a)$$

$$= 4a^3b^2 + 10a^3b^3 - 12a^3b^3 - 4a^3b^2$$

$$= 4a^3b^2 - 4a^3b^2 + 10a^3b^3 - 12a^3b^3$$

$$= 0a^3b^2 - 2a^3b^3$$

$$= -2a^3b^3$$

$$(6) \quad t^2(t^2 - 6t - 4) - t^3(5 + 3t)$$

$$= t^4 - 6t^3 - 4t^2 - 5t^3 - 3t^4$$

$$= 1t^4 - 3t^4 - 6t^3 - 5t^3 - 4t^2$$

$$= -2t^4 - 11t^3 - 4t^2$$

$$\begin{aligned}
 (7) \quad & 7p(2p + 2q) - 3q(7p - q) \\
 &= 14p^2 + 14pq - 21pq + 3q^2 \\
 &= 14p^2 + 14pq - 21pq + 3q^2 \\
 &= 14p^2 - 7pq + 3q^2
 \end{aligned}$$

$$\begin{aligned}
 (8) \quad & 2a^3(5a^2 + 7a) + 5a^4(6a + 8) \\
 &= 10a^5 + 14a^4 + 30a^5 + 40a^4 \\
 &= 10a^5 + 30a^5 + 14a^4 + 40a^4 \\
 &= 40a^5 + 54a^4
 \end{aligned}$$

$$\begin{aligned}
 (9) \quad & (15x - 6y)4 - 2(2y + 6x) \\
 &= 4(15x - 6y) - 2(2y + 6x) \\
 &= 60x - 24y - 4y - 12x \\
 &= 60x - 12x - 24y - 4y \\
 &= 48x - 28y
 \end{aligned}$$

$$\begin{aligned}
 (10) \quad & (2k^6m^2 + 3k^3m^3) - 3km(6k^5m + 9km) \\
 &= 2k^6m^2 + 3k^3m^3 - 18k^6m^2 - 27k^2m^2 \\
 &= 2k^6m^2 - 18k^6m^2 + 3k^3m^3 - 27k^2m^2 \\
 &= 16k^6m^2 + 3k^3m^3 - 27k^2m^2
 \end{aligned}$$