

1.
$$-\left[-\left(\frac{1}{2}ab - \frac{2}{3}b\right) + \frac{1}{6}ab\right] + \frac{5}{3}ab =$$
$$= -\left[-\frac{1}{2}ab + \frac{2}{3}b + \frac{1}{6}ab\right] + \frac{5}{3}ab = \frac{1}{2}ab - \frac{2}{3}b - \frac{1}{6}ab + \frac{5}{3}ab = 2ab - \frac{2}{3}b$$
2.
$$(a - b) - [(4a + 5b) - (3a - 3b)] + (-9) = a - b - [4a + 5b - 3a + 3b] - 9 =$$
$$= a - b - a - 8b - 9 = -9b - 9$$
3.
$$-(-3a + 2b) - \{[(7a - 1) - (3a + 2b)] - (3a + 2)\} =$$
$$= 3a - 2b - [7a - 1 - 3a - 2b - 3a - 2] = 3a - 2b - a + 2b + 3 = 2a + 3$$
4.
$$-(2a) - \{-3a^5 - [(2a^5 - 8a) + 2a^4]\} + [-(5a^5 - 5a + a^4) - (a^4 + a)] =$$
$$= -2a - \{-3a^5 - 2a^5 + 8a - 2a^4\} - 5a^5 + 5a - a^4 - a^4 - a =$$
$$= -2a + 3a^5 + 2a^5 - 8a + 2a^4 - 5a^5 + 5a - a^4 - a^4 - a = -6a$$
5.
$$2a - \{3a^2 - [2a(-a - b - 5) + (-4a)(-2b)]\} =$$
$$= 2a - \{3a^2 - [-2a^2 - 2ab - 10a + 8ab]\} =$$
$$= 2a - \{3a^2 + 2a^2 + 2ab + 10a - 8ab\} = 2a - 5a^2 + 6ab - 10a = -8a - 5a^2 + 6ab$$
6.
$$3a[2a(3ab - b) + ab(1 - a)] = 3a[6a^2b - 2ab + ab - a^2b] = 3a(5a^2b - ab) =$$
$$15a^3b - 3a^2b$$
7.
$$3x(x^2 - 2y) - 3y(y - 4x) = 3x^3 - 6xy - 3y^2 + 12xy = 3x^3 + 6xy - 3y^2$$
8.
$$a^2(a - b) + 5a^2b(3a - 2) = a^3 - a^2b + 15a^3b - 10a^2b = a^3 + 15a^3b - 11a^2b$$
9.
$$-3\{(-14a + 3b)b - 5[2ab(3a - 2 - b) - 6a^2b]\} + 9b(b + 2a) =$$
$$= -3\{-14ab + 3b^2 - 5[6a^2b - 4ab - 2ab^2 - 6a^2b]\} + 9b^2 + 18ab =$$
$$= -3\{-14ab + 3b^2 + 20ab + 10ab^2\} + 9b^2 + 18ab =$$
$$= -3\{6ab + 3b^2 + 10ab^2\} + 9b^2 + 18ab =$$
$$= -18ab - 9b^2 - 30ab^2 + 9b^2 + 18ab = -30ab^2$$
10.
$$2a^2 - \{[-(-2a)(2 - 3b) + 8ab](-a)\} - 3a(2a + 6ab) =$$
$$= 2a^2 - \{[4a - 6ab + 8ab](-a)\} - 6a^2 - 18a^2b =$$
$$= 2a^2 - \{-4a^2 - 2a^2b\} - 6a^2 - 18a^2b =$$
$$= 2a^2 + 4a^2 + 2a^2b - 6a^2 - 18a^2b = -16a^2b$$

$$\begin{aligned} 11. \quad & -3x \{[-(x+y)(-2y) + 3xy](-2)\} + 10x^2(-y) - y(4xy) = \\ & = -3x \{[2xy + 2y^2 + 3xy](-2)\} - 10x^2y - 4xy^2 = \\ & = -3x \{-10xy - 4y^2\} - 10x^2y - 4xy^2 = \\ & = 30x^2y + 12xy^2 - 10x^2y - 4xy^2 = 20x^2y + 8xy^2 \end{aligned}$$

$$12. \quad 4ab + (a-b)(a+2b) + 2(-b)^2 = 4ab + a^2 + 2ab - ab - 2b^2 + 2b^2 = a^2 + 5ab$$

$$\begin{aligned} 13. \quad & x^2 - 2(x-y)(x+y) + 8(x^2 - y^2) = x^2 - 2(x^2 - y^2) + 8x^2 - 8y^2 = \\ & = x^2 - 2x^2 + 2y^2 + 8x^2 - 8y^2 = 7x^2 - 6y^2 \end{aligned}$$

$$\begin{aligned} 14. \quad & a(3a-3) + (3a-2ab)(1-a) = \\ & = 3a^2 - 3a + 3a - 2ab - 3a^2 + 2ab = 0 \end{aligned}$$