1. $(a - b)^2 - (a - b) = \mathbf{(a - b)(a - b - 1)}$

2. $(2x - 3)^3 + (2x - 3)^2 = (2x - 3)^2(2x - 3 + 1) = (2x - 3)^2(2x - 2) = \mathbf{2\,(2x - 3)^3(x - 1)}$

3. $a^2x - x + a^2y - y = x\,(a^2 - 1) + y\,(a^2 - 1) = (a^2 - 1)(x + y) = \mathbf{(a - 1)(a + 1)(x + y)}$

4. $3ax^2 - 6x^2 - 3a + 6 = 3(ax^2 - 2x^2 - a + 2) = 3[x^2(a - 2) - 1(a - 2)] =$

    $= 3(a - 2)(x^2 - 1) = \mathbf{3(a - 2)(x + 1)(x - 1)}$

5. $2a^3b^2 - 12\,a^2b^4 + 4ab^6 - 24b^8 = 2b^2(a^3 - 6a^2b^2 + 2ab^4 - 12b^6) =$

    $= 2b^2[a^2(a - 6b^2) + 2b^4(a - 6b^2)] = \mathbf{2b^2(a - 6b^2)(a^2 + 2b^4)}$

6. $25\,a^5b^3 - a^3b = a^3b(25a^2b^2 - 1) = \mathbf{a^3b(5ab - 1)(5ab + 1)}$

7. $81a^5 - a = a(81a^4 - 1) = a(9a^2 - 1)(9a^2 + 1) = \mathbf{a(3a - 1)(3a + 1)(9a^2 + 1)}$

8. $\left(-\frac{3}{2}a + \frac{3}{4}b\right)^2 - \left(\frac{1}{2}a + \frac{1}{4}b\right)^2 = \left(-\frac{3}{2}a + \frac{3}{4}b + \frac{1}{2}a + \frac{1}{4}b\right)\left(-\frac{3}{2}a + \frac{3}{4}b - \frac{1}{2}a - \frac{1}{4}b\right) = \mathbf{(-a + b)\left(-2a + \frac{1}{2}b\right)}$

9. $-x^6y^2 + 16\,x^{2n+6} = x^6(-y^2 + 16\,x^{2n}) = \mathbf{x^6(-y + 4x^n)(y + 4x^n)}$

10. $(ab + 3)^2 - 9 = (ab + 3 - 3)(ab + 3 + 3) = \mathbf{ab(ab + 6)}$