

Exercise A

- $7(a + 4) = 7a + 28$
- $x(y - 3) = xy - 3x$
- $-3(b + 2) + 5 = -3b - 6 + 5$
 $= -3b - 1$
- $(a + 5)h = h(a + 5) = ah + 5h$
- $-2x(x - 5) = -2x^2 + 10x$
- $-(g - 3) = -1(g - 3)$
 $= -g + 3$
 $= 3 - g$
- $3(4a - 9) - a(2 - a) = 12a - 27 - 2a + a^2$
 $= a^2 + 12a - 2a - 27$
 $= a^2 + 10a - 27$
- $-x(4 - x) - x^2(x - a) = -4x + x^2 - x^3 + ax^2$
 $= -x^3 + ax^2 + x^2 - 4x$

Exercise B

- $(a + 5)(a + 4) = a^2 + 4a + 5a + 20$
 $= a^2 + 9a + 20$
- $(y + 6)(y - 3) = y^2 - 3y + 6y - 18$
 $= y^2 + 3y - 18$
- $(b - 5)(b + 2) = b^2 + 2b - 5b - 10$
 $= b^2 - 3b - 10$
- $(-a - 5)(a - 8) = -a^2 + 8a - 5a + 40$
 $= -a^2 + 3a + 40$
Notice here: $-a \times a = -a^2$
- $(x - 2)^2 + 3(x - 1) = (x - 2)(x - 2) + 3x - 3$
 $= x^2 - 2x - 2x + 4 + 3x - 3$
 $= x^2 - x + 1$

6. $(4a - 9)(2 - a) = 8a - 4a^2 - 18 + 9a$
 $= -4a^2 + 17a - 18$
7. $(x - 7)(x^2 - 4x + 2) = x^3 - 4x^2 + 2x - 7x^2 + 28x - 14$
 $= x^3 - 4x^2 - 7x^2 + 2x + 28x - 14$
 $= x^3 - 11x^2 + 30x - 14$
8. $(2k + 3)(3k^2 + 4k - 6) = 6k^3 + 8k^2 - 12k + 9k^2 + 12k - 18$
 $= 6k^3 + 8k^2 + 9k^2 - 12k + 12k - 18$
 $= 6k^3 + 17k^2 - 18$

Exercise C

1. $12a - 18b = 6(2a - 3b)$
2. $20c + 10c^3d = 10c(2 + c^2d)$
3. $-6ef^2 - 3 = -3(2ef^2 + 1)$
Here -3 is the common factor
4. $8g^2h^2 + 6gh^3 = 2gh^2(4g + 3h)$
Always look for the highest common power of a letter:
 $g^2h^2 = gh^2 \times g$ $gh^3 = gh^2 \times h$
5. $3i - 27ij^2 = 3i(1 - 9j^2)$
6. $50k^5l^3 - 15k^2l^3 = 5k^2l^3(10k^3 - 3)$
7. $20m + 2mn - 12m^2 = 2m(10 + n - 6m)$
8. $\frac{1}{2}p^2q + \frac{3}{2}p^3q^3 = \frac{1}{2}p^2q(1 + 3pq^2)$