# Expanding Brackets

1. Expand and simplify the following sets of brackets:
a. $(x + 4)(x + 7)$       b. $(x + 7)(x + 5)$       c. $(x + 7)(x - 6)$
d. $(x + 3)(x - 9)$       e. $(x - 3)(x + 5)$       f. $(x - 4)(x - 7)$
g. $(x + b)(x - 5)$       h. $(x - b)(x - 3)$       i. $(x - b)(x + g)$

2. Expand and simplify the following sets of brackets:
a. $(3x + 4)(x + 7)$       b. $(x + 7)(2x + 5)$       c. $(2x + 7)(2x - 6)$
d. $(3x + 3)(2x - 9)$      e. $(3x - 3)(5x + 5)$      f. $(3x - 4)(4x - 7)$

3. Expand and simplify the following sets of brackets:
a. $2(3x + 2)(2x - 1)$     b. $5(3x + 7)(2x - 1)$     c. $7(2x - 3)(2x - 3)$
d. $4(2x + 1)^2$           e. $3(2x - 3)(2x - 5)$     f. $5(2x - 3)(2x - 1)$

4 Expand and simplify the following sets of brackets:
a. $(2x^2 + x + 3)(x + 7)$       b. $(2x + 1)(x^2 + 5x - 3)$       c. $(2x + 1)(3x^2 + 5x - 1)$
d. $2(2x - 1)(x^2 + 7x + 8)$     e. $5(x^2 + 3x + 1)(x^2 + 6)$     f. $4(2x - 1)(3x^2 - 6x - 2)$

5. Expand and simplify the following sets of brackets:
a. $(3x - 2)^2$       b. $(2x - 3)^2$       c. $(3 - 2x)^2$       d. $(3 - 4x)^2$       f. $2(3x + 1)^2$

6. Expand and simplify
a. $(3x - 1)^2 + 3(x + 5)(x - 3)$                 b. $2(3x - 1)(x - 5) - (2x - 5)^2$
c. $3(2x + 1)(x + 5) - 2(x - 2)^2$                 d. $3(2x + 1)(x - 5) - 3(x - 6)(2x + 3)$

7. Expand and simplify :
$$(x + 6)(2x^2 + 7x - 4)$$

8. Expand and simplify:
$$(2x + 1)(x - 2)^2$$

9. Expand and simplify:
$$(3x^2 - 7x + 9)(x - 5)$$

10. Expand and simplify:
$$4(3x - 2)^2 - 3(3 - 2x)^2$$

11. Find the value of the shaded area