# Factoring Quadratic Expressions
## ANSWERS

**Section A** *Simplify then factorise the following quadratic expressions.*

1) $x^2 - 6x - 2x + 12$ $(x - 2)(x - 6)$

2) $d(d - 5) - 84$ $(d + 7)(d - 12)$

3) $b^2 + 2(b - 4)$ $(b - 2)(b + 4)$

4) $x^2 - 3(2x + 9)$ $(x + 3)(x - 9)$

5) $c(c + 8) - 48$ $(c - 4)(c + 12)$

6) $3a(a - 2) - 4a + 3$ $(3a - 1)(a - 3)$

7) $5w(w - 2) - 4w - 3$ $(5w + 1)(w - 3)$

8) $3(6 - 5s) + s^2 + s^2$ $(2s - 3)(s - 6)$

9) $3 + 2y(4y + 5)$ $(4y + 3)(2y + 1)$

10) $9x^2 - (x - 3)^2$ $(2x + 3)(4x - 3)$

**Section B** *Factorise the following quadratic expressions.*

1) $x^2 - 4$
$(x - 2)(x + 2)$

2) $s^2 - 25$
$(s - 5)(s + 5)$

3) $t^2 - 64$
$(t - 8)(t + 8)$

4) $9 - y^2$
$(3 - y)(3 + y)$

5) $49 - p^2$
$(7 - p)(7 + p)$

6) $4q^2 - 121$
$(2q - 11)(2q + 11)$

7) $81 - 25k^2$
$(9 - 5k)(9 + 5k)$

8) $1 - 400d^2$
$(1 + 20d)(1 - 20d)$

9) $600v^2 - 6$
$6(10v - 1)(10v + 1)$

10) $a^2 - b^2$
$(a - b)(a + b)$

11) $x^2 - 9y^2$
$(x + 3y)(x - 3y)$

12) $4c^2 - d^2$
$(2c + d)(2c - d)$

13) $16s^2 - 9t^2$
$(4s - 3t)(4s + 3t)$

14) $49w^2 - 100v^2$
$(7w - 10v)(7w + 10v)$

15) $32p^2 - 18q^2$
$2(4p - 3q)(4p + 3q)$

16) $48x^2 - 12y^2$
$12(2x - y)(2x + y)$

17) $45a^2 - 125b^2$
$5(3a - 5b)(3a + 5b)$

18) $72x^2 - 242y^2$
$2(6x - 11y)(6x + 11y)$

19) $a^2b^2 - c^2$
$(ab - c)(ab + c)$

20) $9s - 4s^3$
$s(3 - 2s)(3+2s)$

21) $(xy)^2 - 4z^2$
$(xy - 2z)(xy + 2z)$

22) $64t^4 - 16s^4$
$(8t^2 - 4s^2)(8t^2 + 4s^2)$

23) $(4x^2)^2 - 36y^2$
$(4x^2 - 6y)(4x^2 + 6y)$

24) $27a^4 - 12b^2$
$3(3a^2 - 2b)(3a^2 + 2b)$

**Extension**

*Using the difference of two squares factorise the following expressions.*

1) $4x^2 - (x - 2)^2$
$(3x - 2)(x + 2)$

2) $(2x + 1)^2 - (x - 4)^2$
$(x + 5)(3x - 3)$