

$$x^2 + x$$

$$x^2 + 2x + 1$$

$$x^2 - 1$$

$$x^2 - x$$

$$x^2 - 2x + 1$$

$$x^2 + x - 2$$

$$x^2 + 3x + 2$$

$$x^2 - 3x + 2$$

$$x^2 - x - 2$$

$$x^2 + 2x - 3$$

$$x^2 - 2x - 3$$

$$x^2 + 5x + 4$$

$$x(x + 1)$$

$$(x + 1)^2$$

$$(x + 1)(x - 1)$$

$$x(x - 1)$$

$$(x - 1)^2$$

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

$$(x + 2)(x + 1)$$

$$(x - 2)(x - 1)$$

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

$$(x + 3)(x - 1)$$

$$(x - 3)(x + 1)$$

$$(x + 4)(x + 1)$$

$$x^2 + 2x$$

$$x^2 + 4x + 4$$

$$x^2 - 4$$

$$x^2 - 2x$$

$$x^2 - 4x + 4$$

$$x^2 + 3x$$

$$x^2 + 4x$$

$$x^2 - 5x + 4$$

$$x^2 - 3x$$

$$x^2 - 4x$$

$$x^2 + 3x - 4$$

$$x^2 - 3x - 4$$

$$x(x + 2)$$

$$(x + 2)^2$$

$$(x + 2)(x - 2)$$

$$x(x - 2)$$

$$(x - 2)^2$$

$$x(x + 3)$$

$$x(x + 4)$$

$$(x - 4)(x - 1)$$

$$x(x - 3)$$

$$x(x - 4)$$

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

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

$$2x^2 + 2x$$

$$4x^2 + 4x + 1$$

$$4x^2 - 1$$

$$2x^2 - 2x$$

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

$$2x^2 + 3x - 2$$

$$2x^2 + 3x + 1$$

$$2x^2 - x - 1$$

$$2x^2 - 3x - 2$$

$$2x^2 - 3x + 1$$

$$2x^2 + x - 1$$

$$2x^2 - 5x + 2$$

$$2x(x + 1)$$

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

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

$$2x(x - 1)$$

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

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

$$(2x + 1)(x + 1)$$

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

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

$$(2x - 1)(x - 1)$$

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

$$(x - 2)(2x - 1)$$

$$3x^2 + 3x$$

$$9x^2 + 6x + 1$$

$$9x^2 - 1$$

$$3x^2 - 3x$$

$$9x^2 - 6x + 1$$

$$3x^2 + 5x - 2$$

$$3x^2 + 4x + 1$$

$$3x^2 - 2x - 1$$

$$3x^2 - 5x - 2$$

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

$$3x^2 + 2x - 1$$

$$3x^2 - 7x + 2$$

$$3x(x + 1)$$

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

$$(3x + 1)(3x - 1)$$

$$3x(x - 1)$$

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

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

$$(3x + 1)(x + 1)$$

$$(x - 1)(3x + 1)$$

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

$$(3x - 1)(x - 1)$$

$$(x + 1)(3x - 1)$$

$$(x - 2)(3x - 1)$$

$$3x^2 + x$$

$$9x^2 + 12x + 4$$

$$6x^2 - x - 1$$

$$3x^2 - x$$

$$9x^2 - 12x + 4$$

$$6x^2 + x - 1$$

$$3x^2 + 7x + 2$$

$$3x^2 - x - 2$$

$$3x^2 - 4x - 4$$

$$3x^2 - 5x + 2$$

$$3x^2 + x - 2$$

$$3x^2 - 10x + 3$$

$$x(3x + 1)$$

$$(3x + 2)^2$$

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

$$x(3x - 1)$$

$$(3x - 2)^2$$

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

$$(3x + 1)(x + 2)$$

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

$$(x - 2)(3x + 2)$$

$$(3x - 2)(x - 1)$$

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

$$(x - 3)(3x - 1)$$

$$4x^2 + 12x + 9$$

$$9x^2 + 24x + 16$$

$$9x^2 - 4$$

$$4x^2 - 12x + 9$$

$$9x^2 - 24x + 16$$

$$4x^2 - 9$$

$$2x^2 + 9x + 9$$

$$6x^2 + 13x + 6$$

$$4x^2 - 25$$

$$2x^2 + 13x + 21$$

$$4x^2 + 8x + 3$$

$$8x^2 + 34x + 21$$

$$(2x + 3)^2$$

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

$$(3x - 2)(3x + 2)$$

$$(2x - 3)^2$$

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

$$(2x - 3)(2x + 3)$$

$$(2x + 3)(x + 3)$$

$$(3x + 2)(2x + 3)$$

$$(2x - 5)(2x + 5)$$

$$(x + 3)(2x + 7)$$

$$(2x + 1)(2x + 3)$$

$$(4x + 3)(2x + 7)$$

$$15x^2 + 11x + 2$$

$$10x^2 + 11x - 6$$

$$14x^2 + x - 3$$

$$10x^2 + 23x + 12$$

$$4x^2 + 4x - 15$$

$$6x^2 + 13x - 8$$

$$3x^2 + 20x + 12$$

$$4x^2 - 31x - 8$$

$$12x^2 - 28x - 5$$

$$4x^2 + 11x + 6$$

$$9x^2 + 9x - 10$$

$$9x^2 + 5x - 4$$

$$(3x + 1)(5x + 2)$$

$$(5x - 2)(2x + 3)$$

$$(2x + 1)(7x - 3)$$

$$(5x + 4)(2x + 3)$$

$$(2x - 3)(2x + 5)$$

$$(3x + 8)(2x - 1)$$

$$(3x + 2)(x + 6)$$

$$(4x + 1)(x - 8)$$

$$(6x + 1)(2x - 5)$$

$$(4x + 3)(x + 2)$$

$$(3x + 5)(3x - 2)$$

$$(x + 1)(9x - 4)$$

$$8x^2 - 22x + 5$$

$$8x^2 + 13x - 6$$

$$10x^2 + 13x - 9$$

$$10x^2 - 21x + 9$$

$$6x^2 + 35x - 6$$

$$9x^2 - 16$$

$$12x^2 - 28x + 15$$

$$6x^2 - 11x - 35$$

$$4x^2 - 11x - 15$$

$$10x^2 - 27x + 14$$

$$6x^2 - 5x - 21$$

$$24x^2 + 2x - 15$$

$$(4x - 1)(2x - 5)$$

$$(8x - 3)(x + 2)$$

$$(5x + 9)(2x - 1)$$

$$(5x - 3)(2x - 3)$$

$$(6x - 1)(x + 6)$$

$$(3x + 4)(3x - 4)$$

$$(6x - 5)(2x - 3)$$

$$(3x + 5)(2x - 7)$$

$$(x + 1)(4x - 15)$$

$$(10x - 7)(x - 2)$$

$$(2x + 3)(3x - 7)$$

$$(4x - 3)(6x + 5)$$

**Teacher Notes**

**Units** Intermediate Level, *Using algebra, functions and graphs*  
Advanced Level, *Working with algebraic and graphical techniques*

**Skills used in this activity:**

- Expanding brackets and/or factorising quadratic expressions

**Notes**

The odd numbered pages give a set of cards containing quadratic expressions and the even numbered pages give the corresponding factors. The first four pages involve expressions in which the coefficient of  $x$  is 1 and the later pages involve more difficult quadratic expressions.

Copy these pages onto card, laminate them and then cut out the cards before use. You could use different coloured cards for the odd and even pages if you wish. The two sets of cards can be matched to practise expanding brackets and/or factorising quadratic expressions. This can be done by groups of students or by individual students working alone.

