

Algebra

Expansion and Factorization

Example

Fully factorise: **a** $8x^2 + 12x$

b $3y^2 - 6xy$

$$\begin{aligned}\mathbf{a} \quad & 8x^2 + 12x \\ & = 2 \times 4 \times x \times x + 3 \times 4 \times x \\ & = 4x(2x + 3) \quad \{\text{HCF is } 4x\}\end{aligned}$$

$$\begin{aligned}\mathbf{b} \quad & 3y^2 - 6xy \\ & = 3 \times y \times y - 2 \times 3 \times x \times y \\ & = 3y(y - 2x) \quad \{\text{HCF is } 3y\}\end{aligned}$$

Fully factorise:

a $x^2 + 2x$

b $5x - 2x^2$

c $4x^2 + 8x$

d $14x - 7x^2$

e $6x^2 + 12x$

f $x^3 + 9x^2$

g $x^2y + xy^2$

h $4x^3 - 6x^2$

i $9x^3 - 18xy$

j $a^3 + a^2 + a$

k $2a^2 + 4a + 8$

l $3a^3 - 6a^2 + 9a$

