

Algebra 1

chapter

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Section 1.3 Factorising algebraic expressions

- Jc
- ① HCF
 - ② Diff. 2 squares
 - ③ Grouping
 - ④ Quadratic

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Exercise 1.3

Using the highest common factor, factorise each of the following:

1. $5x^2 - 10x$

2. $6ab - 12bc$

3. $3x^2 - 6xy$

① HCF $5x \Rightarrow 5x(x-2)$

② HCF $6b \Rightarrow 6b(a-2c)$

③ HCF $3x \Rightarrow 3x(x-2y)$

Factorise each of the following by grouping terms.

$$12. \quad 2c^2 - 4cd + c - 2d$$

$$= c(2c+1) - 2d(2c+1) \checkmark$$

$$= (c-2d)(2c+1)$$

$$13. \quad 8ax + 4ay - 6bx - 3by$$

$$4a(2x+y) - 3b(2x+y)$$

$$(4a-3b)(2x+y)$$

Using the difference of two squares, factorise the following:

$$20. \quad 9x^2 - y^2$$

$$(3x+y)(3x-y)$$

$$21. \quad 16x^2 - 25y^2$$

$$(4x+5y)(4x-5y)$$

Factorise each of the following quadratic expressions:

39. $3x^2 - 17x + 20$

40. $7x^2 - 18x + 8$

Q.39

$$\begin{array}{r} +20 \\ \hline 1 \times 20 \\ 2 \times 10 \\ 4 \times 5 \checkmark \end{array}$$

$$3x^2 - 17x + 20$$

$$(3x - 5)(x - 4) \checkmark$$

-5x
-12x

Q40

$$\begin{array}{r} 8 \\ \hline 8 \times 1 \\ 4 \times 2 \checkmark \end{array}$$

$$7x^2 - 18x + 8$$

$$(7x - 4)(x - 2) \checkmark$$

-4x
-14x