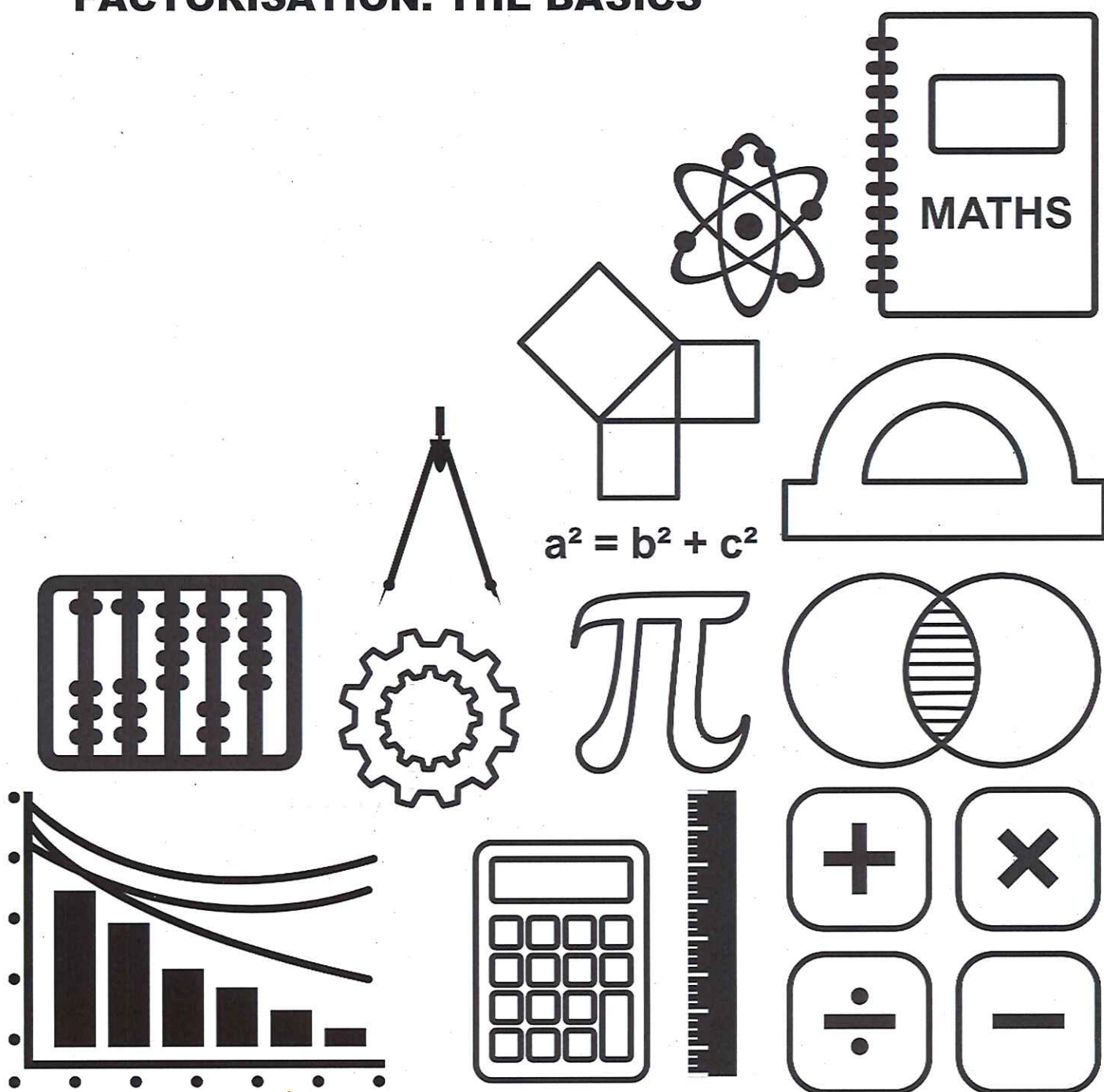


MATHSDIY

GCSE TOPIC BOOKLET

SOLUTIONS

FACTORISATION: THE BASICS



1. Complete these statements.

a) $6x + 8y = 2(3x + 4y)$ (1)

b) $9x - 6y = 3(3x - 2y)$ (1)

c) $10a + 8b = 2(5a + 4b)$ (1)

d) $4x - 20y = 4(x - 5y)$ (1)

e) $18x - 9y = 9(2x - y)$ (1)

f) $16x + 8y + 4z = 4(4x + 2y + z)$ (1)

g) $27c + 81d = 27(c + 3d)$ (1)

h) $15s + 35t = 5(3s + 7t)$ (1)

i) $24m - 40n = 8(3m - 5n)$ (1)

j) $2xy + 8y^2 = 2y(x + 4y)$ (1)

2. Factorise the following expressions.

a) $8x + 10y = 2(4x + 5y)$ (1)

b) $27x - 15y = 3(9x - 5y)$ (1)

c) $3x + 12y + 6z = 3(x + 4y + 2z)$ (1)

d) $8x - 10y + 40z = 2(4x - 5y + 20z)$ (1)

e) $35u - 21v = 7(5u - 3v)$ (1)

f) $12s - 18t = 6(2s - 3t)$ (1)

g) $8x^2 + 16y^2 = 8(x^2 + 2y^2)$ (1)

h) $27a + 63b - 18c = 9(3a + 7b - 2c)$ (1)

i) $3x^2 - 9y^2 - 15z^2 = 3(x^2 - 3y^2 - 5z^2)$ (1)

3. Factorise $3a^2 - 6a$

$$= \underline{3a(a-2)}$$

(2)

4. Factorise $4x^2 - 6x$

$$= \underline{2x(2x-3)}$$

(2)

5. Factorise $3y^2 - 9y$

$$= \underline{3y(y-3)}$$

(2)

6. Factorise $8x^2 - 16x$

$$= \underline{8x(x-2)}$$

(2)

7. Factorise $2b^2 - 6b$

$$= \underline{2b(b-3)}$$

(2)

8. Factorise $14y + 7y^2$

$$= \underline{7y(2+y)}$$

(2)

9. Factorise $3a^3 - 6a^2$

$= 3a^2(a-2)$

(2)

10. Factorise $4x^2 - 16y^2 - 8z^2$

$= 4(x^2 - 4y^2 - 2z^2)$

(2)

11. Factorise $3ay^2 - 6ay - 9a^2$

$= 3a(y^2 - 2y - 3a)$

(2)

12. Factorise $15x^2y - 9xyz - 6xy^2$

$= 3xy(5x - 3z - 2y)$

(2)

13. Factorise $2m^2n + 6a^2n$

$= 2n(m^2 + 3a^2)$

(2)

14. Factorise $40x^2 - 60y^2 - 30z^2$

$= 10(4x^2 - 6y^2 - 3z^2)$

(2)