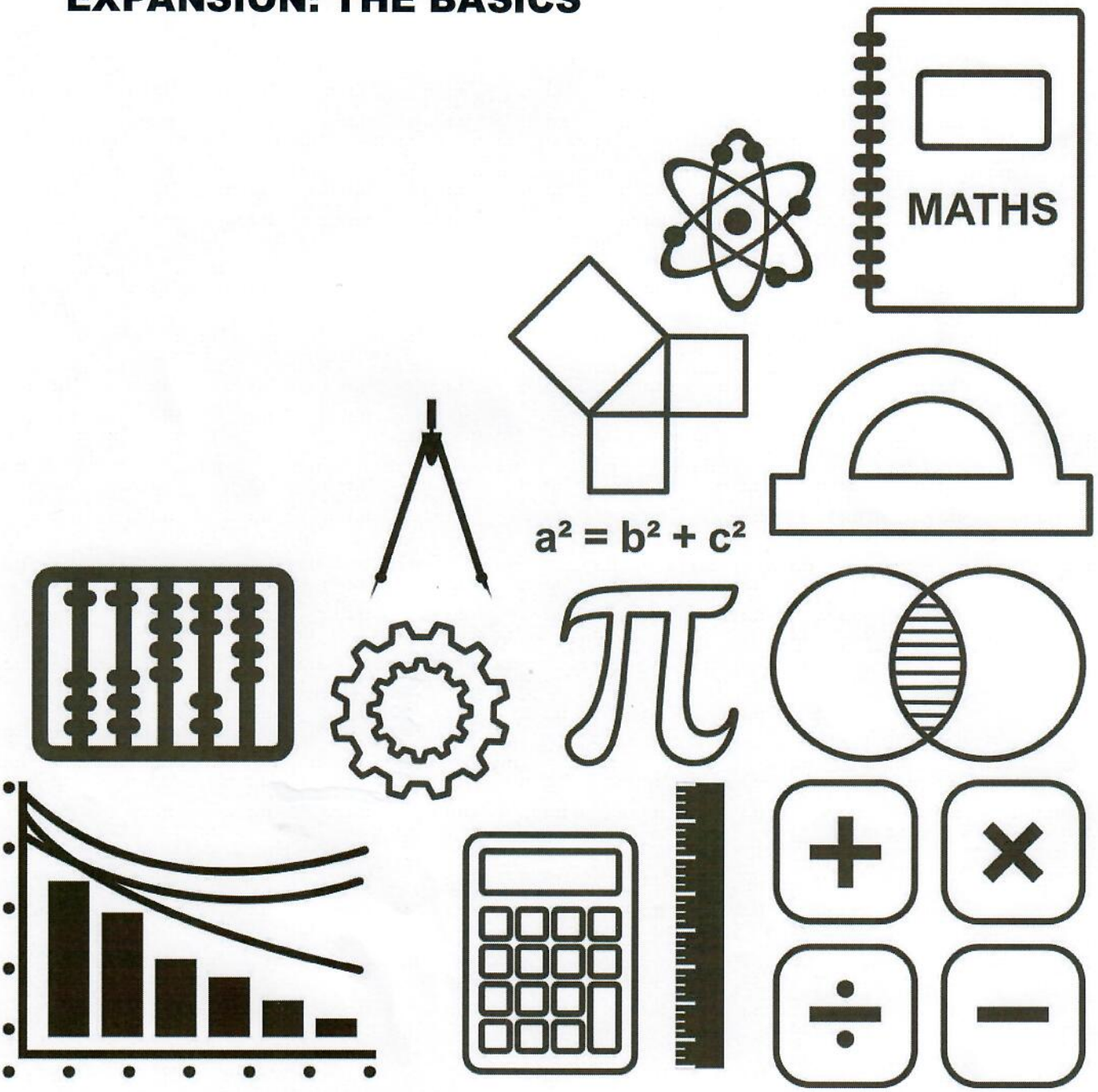
MATHSDIY

SOLUTIONS

GCSE TOPIC BOOKLET
EXPANSION: THE BASICS



1. a) Expand $5(x-2)$.

$= 5x - 10$

(1)

b) Expand $4(x-3)$.

$= 4x - 12$

(1)

c) Expand $6(x-5)$.

$= 6x - 30$

(1)

2. a) Expand and simplify $4(3x-1) + 3(x-5)$.

$= 12x - 4 + 3x - 15$

$= 15x - 19$

(2)

b) Expand the following expression, simplifying your answer as far as possible.

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

$= 4x - 8 + 6x + 15$

$= 10x + 7$

(2)

c) Expand $2x(x^2+3)$.

$= 2x^3 + 6x$

(2)

3. a) Expand and simplify: $4(2y - 3) - 3(y + 5)$

$= 8y - 12 - 3y - 15$

$= 5y - 27$

(2)

b) Expand $x^3(3x - 5)$.

$= 3x^4 - 5x^3$

(2)

4. a) Expand $5(x + 8)$.

$= 5x + 40$

(1)

b) Expand $x(x^2 + 7)$.

$= x^3 + 7x$

(2)

5. a) Expand and simplify: $4(x + 5) - 3(2x - 4)$

$= 4x + 20 - 6x + 12$

$= -2x + 32$

(2)

b) Expand $5y(2y^2 - 3)$.

$= 10y^3 - 15y$

(2)

6. a) Expand and simplify $4(2x + 3) - 3(x + 2)$.

$= 8x + 12 - 3x - 6$

$= 5x + 6$

(2)

b) Expand the following expression, simplifying your answer as far as possible.

$3(4a - 2c) - 2(2a + 4c)$.

$= 12a - 6c - 4a - 8c$

$= 8a - 14c$

(2)

7. a) Expand and simplify $3(2a - 4) - 3(a - b)$.

$= 6a - 12 - 3a + 3b$

$= 3a + 3b - 12$

(2)

b) Expand the following expression, simplifying your answer as far as possible.

$3(4r - 2s) - 2(r + 4s)$.

$= 12r - 6s - 2r - 8s$

$= 10r - 14s$

(2)