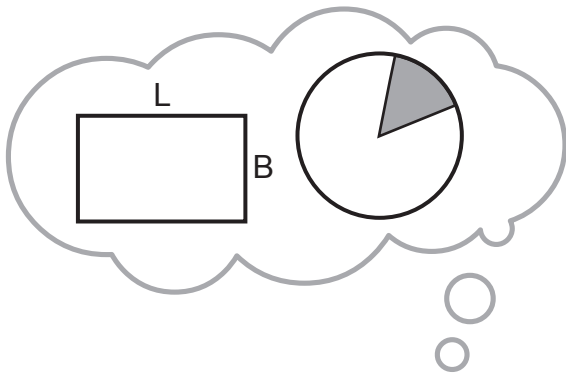# MATHLETICS

Perimeter and Area

Teacher Book - Series J-1

L

B

Mathletics
Instant
Workbooks

Perimeter and area
Topic Test

PART A

Time allowed: 15 minutes   **Total marks = 15**

1 How many centimetres are there in 5·2 metres?
   (A) 52   (B) 5200   (C) 250   (D) 520

1

2 The area of a circle is given by the formula
   (A) πr^2 (B) πd^2 (C) $2\pi r^2$ (D) $2\pi d^2$

1

3 The perimeter of a circle is called its
   (A) radius   (B) diameter   (C) circumference   (D) semi-circle

1

4 How many mm^2 in 8 cm^2?
   (A) 8   (B) 80   (C) 800   (D) 8000

1

5 What is the cost of tiling a floor 12 m by 8 m at $30 per square metre?
   (A) $240   (B) $360   (C) $2880   (D) $8280

1

6 What is the perimeter in cm of a square that has an area of 64 cm^2?
   (A) 16 cm   (B) 24 cm   (C) 32 cm   (D) 40 cm

1

7 How many tiles, each measuring 20 cm × 20 cm are needed for a floor 10 m × 10 m?
   (A) 2500   (B) 5000   (C) 25 000   (D) 50 000

1

8 The radius of the Earth is approximately 6400 km. What is the circumference of the Earth at the Equator?
   (A) 88 840 km   (B) $1·287 \times 10^8$ km   (C) 40 212 km   (D) 20 106 km

1

9 What is the area of a circle of radius 5·8 m? Answer to the nearest square metre.
   (A) $18 m^2$ (B) $36 \ m^2$ (C) $106 \ m^2$ (D) $212 \ m^2$

1

10 The circumference of a bicycle wheel is 2·1 m. How far does the cyclist travel in 1000 turns of the wheel?
   (A) 4410 m   (B) 6597 m   (C) 2100 m   (D) 13 194 m

1

11 Find the perimeter of an equilateral triangle of side 2·35 m.
   (A) 12·98 m   (B) 4·7 m   (C) 7·05 m   (D) None of these

1

12 The distance from the earth to the sun is 150 million kilometres. The earth revolves once around the sun each year. What distance is this to the nearest million kilometres?
   (A) 471   (B) 942   (C) 4712   (D) 9425

1

13 Find the circumference of a wheel with diameter 98 cm. Answer to the nearest cm.
   (A) 308   (B) 616   (C) 154   (D) 380

1

14 What is the side length of a square that has the same perimeter as a rectangle of 12 m by 6 m?
   (A) 4   (B) 6   (C) 9   (D) 12

1

15 A square has a perimeter of 48 cm. Its area in cm^2 is
   (A) 48   (B) 60   (C) 96   (D) 144

1

Total marks achieved for PART A   15

Perimeter and area
Topic Test

PART B

Time allowed: 15 minutes   **Total marks = 15**

Question 1

a   What is the side length of a square that has an area of 250 000 m²?

☐ 1

b   Convert 2·84 m² to cm².

☐ 1

c   If the area of a triangle is 120 cm² and its base is 24 cm, find the height of the triangle.

☐ 1

d   Calculate the radius of a semi-circle whose area is 48π cm².

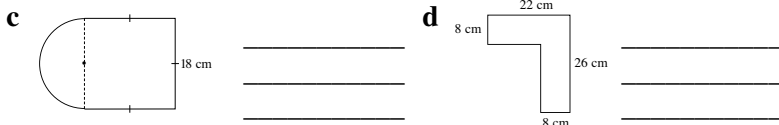☐ 1

e   A rhombus has diagonals 72 mm and 96 mm, find its area.
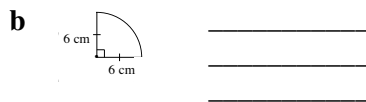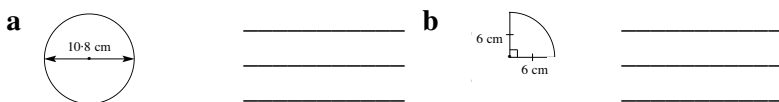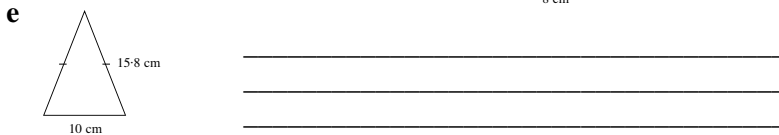
☐ 1

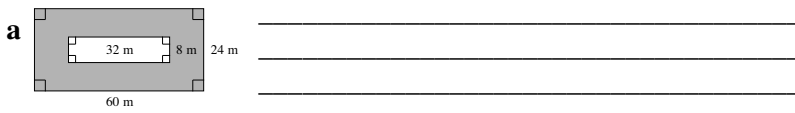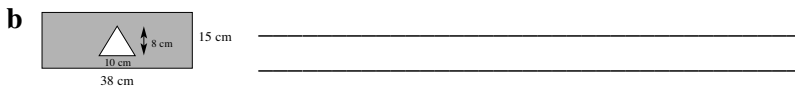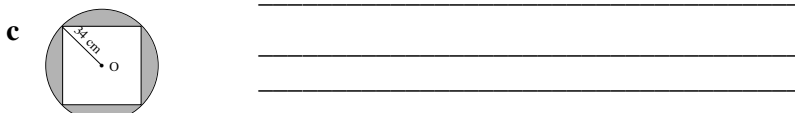### Question 2   Find the perimeter of each of the following shapes.

a

b

☐ 2

c

d

☐ 2

e
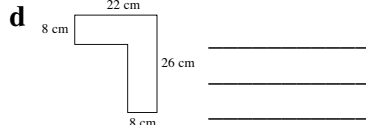
☐ 1

Question 3   Find each shaded area.

a

☐ 1

b

☐ 1

c

☐ 1

d

☐ 1

e

☐ 1
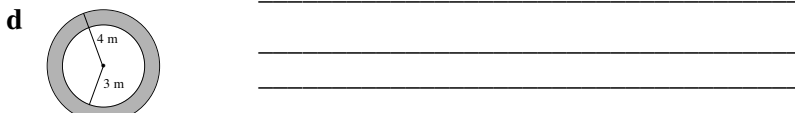
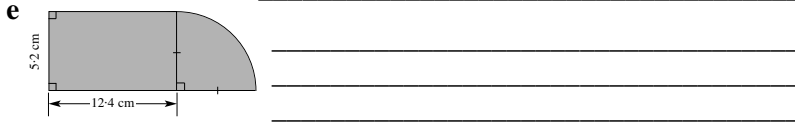**Total marks achieved for PART B**   ◻15

Answers – Perimeter and area

Page 1 **1 a** isosceles **b** equilateral **c** scalene **d** acute-angled **e** right-angled **f** obtuse-angled **2 a** square **b** rectangle **c** parallelogram **d** rhombus **e** trapezium **f** kite **3 a** pentagon **b** hexagon **c** octagon **4 a** circle **b** semi-circle **c** quadrant **d** minor segment **e** sector **f** ellipse

Page 2 **1 a** $P = 4s$ **b** $P = 2l + 2b$ **c** $P = 3s$ **d** $P = 2a + 2b$ **e** $P = 2\pi r$ **f** $P = 2r + l$ **2 a** 98 cm **b** 60 cm **c** 56 cm **3 a** 36 cm **b** 38 cm **c** 24 cm **4 a** 70 cm **b** 60 cm **c** 28 cm

Page 3 **1 a** 79 cm **b** 48 cm **c** 64 cm **d** 42 cm **2 a** 61·8 cm **b** 50·7 cm **c** 57 cm **d** 66·6 cm **3** 36·5 cm **4** 46·24 m

Page 4 **1 a** $\frac{1}{2}$ **b** $\frac{1}{4}$ **c** $\frac{1}{3}$ **d** $\frac{3}{4}$ **e** $\frac{1}{6}$ **f** $\frac{1}{12}$ **g** $\frac{1}{8}$ **h** $\frac{5}{12}$ **i** $\frac{5}{8}$ **2 a** 10π cm **b** 20π cm **c** $\frac{20\pi}{3}$ cm **d** 5π cm **e** $\frac{40\pi}{3}$ cm **f** 30π cm **3 a** 53·6 cm **b** 81·9 cm **c** 41·7 cm **d** 64·3 m **e** 8·4 m **f** 37·6 m

Page 5 **1 a** $A = s^2$ **b** $A = lb$ **c** $A = \frac{1}{2}bh$ **d** $A = bh$ **e** $A = \frac{1}{2}xy$ **f** $A = \frac{1}{2}h(a + b)$ **g** $A = \frac{1}{2}ab$ **h** $A = \pi r^2$ **i** $A = \frac{\theta}{360°} \times \pi r^2$ **2 a** 68·04 cm^2 **b** 68·89 cm^2 **c** 25·44 cm^2 **d** 170·52 cm^2 **e** 188·34 cm^2 **f** 69·3 cm^2 **3 a** 60 cm^2 **b** 452·4 cm^2 **c** 200 cm^2 **d** 615·75 cm^2 **e** 80 cm^2 **f** 42·32 cm^2

Page 6 **1** f, d, c, e, a, b **2 a** 22 cm^2 **b** 190 cm^2 **c** 50 cm^2 **d** 240 cm^2 **e** 240 cm^2 **f** 320 cm^2 **3 a** 144π cm^2 **b** 216π cm^2 **c** $\frac{675\pi}{8}$ cm^2 **4 a** 7·3 cm **b** 8·5 cm **c** 7·1 cm

Page 7 **1 a** 380 cm^2 **b** 340 cm^2 **c** 54 cm^2 **d** 160 cm^2 **e** 300 cm^2 **f** 117 cm^2 **2 a** 710 cm^2 **b** 926 cm^2 **c** 2047·6 cm^2 **d** 298·45 cm^2 **e** 322 cm^2 **f** 102·73 cm^2 **3 a** 292·25 cm^2 **b** 201·06 cm^2 **c** 35·16 cm^2 **d** 181·44 cm^2 **e** 20·62 cm^2 **f** 678·58 cm^2

Page 8 **1** 228 m^2 **2** 75 m^2 **3 a** 22 **b** 17 **c** 374 **d** $1561.45 **4** 23·4 tonnes

Page 9 **1** D **2** A **3** C **4** C **5** C **6** C **7** A **8** C **9** C **10** C **11** C **12** B **13** A **14** C **15** D

Page 10 **1 a** 500 m **b** 28 400 cm^2 **c** 10 cm **d** 9·8 cm **e** 3456 mm^2 **2 a** 33·9 cm **b** 21·4 cm **c** 82·3 cm **d** 96 cm **e** 41·6 cm **3 a** 1184 m^2 **b** 530 cm^2 **c** 1319·7 cm^2 **d** 21·99 m^2 **e** 85·7 cm^2