

Topic test 8

Length and area

- Time allowed: 45 minutes.
- Part A: 20 multiple-choice questions (40 marks)
- Part B: 12 free-response questions (60 marks)

Name: _____

Part A

20 multiple-choice questions

2 marks each: 40 marks

Circle the correct answer each time.

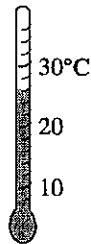
1 $37.5 \text{ cm} = \underline{\quad ? \quad} \text{ mm}$

- A 3750 B 375
C 3.75 D 0.375

2 $240 \text{ m} = \underline{\quad ? \quad} \text{ km}$

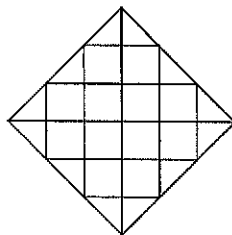
- A 2.4 B 0.24
C 24 000 D 240 000

3 Which of the following is the temperature shown on this thermometer?



- A 27°C
B 25°C
C 23°C
D 26°C

4 Which of the following is the area of this figure if each square is 1 square unit?



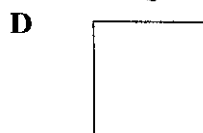
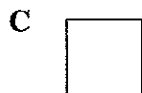
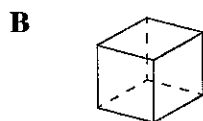
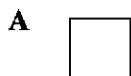
- A 9 square units
B 18 square units
C 25 square units
D 16 square units

5 This is the actual size of a postage stamp. By measurement and calculation, decide which of the following is its area.



- A 10 cm^2
B 7 cm^2
C 5 cm^2
D 11 cm^2

6 Which one of these is a square centimetre?



7 $1 \text{ m}^2 = \underline{\quad ? \quad} \text{ cm}^2$

- A 100 B 1000
C 10 000 D 100 000

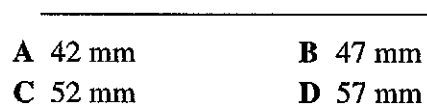
8 $1 \text{ ha} = \underline{\quad ? \quad} \text{ m}^2$

- A 100 B 1000
C 10 000 D 1 000 000

9 The height of your seat above the ground is closest to which of the following?

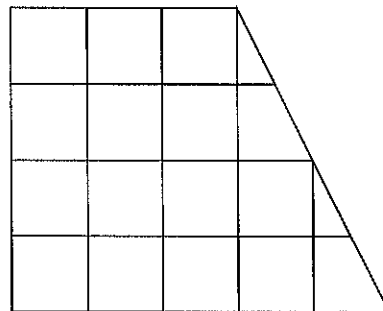
- A 45 mm B 450 mm
C 450 cm D 45 m

10 By measuring, decide which of the following is the length of this interval.



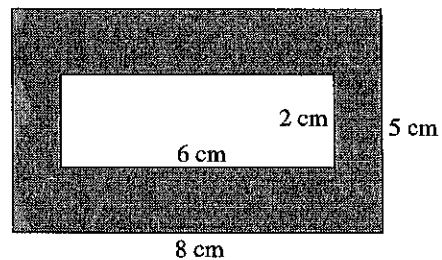
- A 42 mm B 47 mm
C 52 mm D 57 mm

11 Which of the following is the area of this figure?



- A 14.5 cm^2 B 18 cm^2
C 12.5 cm^2 D 16 cm^2

12 Which of the following is the area of the shaded region?

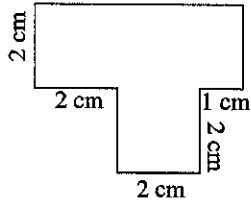


- A 1 cm^2 B 28 cm^2
C 52 cm^2 D 14 cm^2

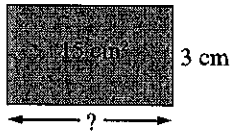
Topic test 8: Length and area *continued*

- 13 A triangle has two equal sides of length 7 cm and a third side of length 8 cm. Which of the following is its perimeter?
 A 28 cm B 22 cm
 C 15 cm D 23 cm

- 14 Which of the following is the area of this figure?
 A 16 cm²
 B 20 cm²
 C 40 cm²
 D 14 cm²



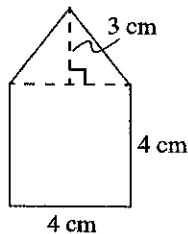
- 15 A rectangle has width 3 cm and area 15 cm². Which of the following is its length?



- A 4.5 cm B 45 cm
 C 5 cm D 12 cm
- 16 The length of a classroom's blackboard is closest to which of the following?
 A 10.5 m B 1.5 m
 C 3.5 m D 7 m

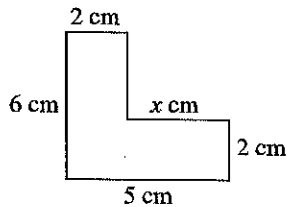
- 17 Which of the following is the area of this figure?

- A 28 cm²
 B 24 cm²
 C 22 cm²
 D 48 cm²



- 18 Which of the following is the value of x in this diagram?

- A 3
 B 4
 C 5
 D 2

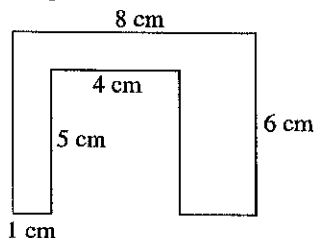


- 19 Which of the following is the area of the figure in Question 18?

- A 18 cm² B 22 cm²
 C 120 cm² D 60 cm²

- 20 Which of the following is the area of this figure?

- A 24 cm²
 B 22 cm²
 C 32 cm²
 D 28 cm²



Part B

**12 free-response questions
 60 marks**

(Show your working where appropriate.)

- 21 (2 marks) Write these lengths in order, from shortest to longest:
 940 cm, 1800 mm, 5.2 m

- 22 (2 marks) What is the distance between X and Y on this ruler?

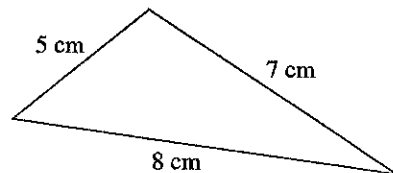


- 23 (6 marks) Complete:

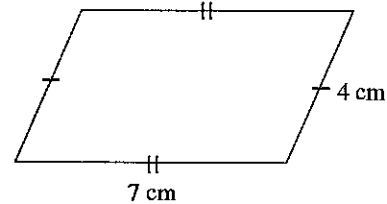
- a 3.5 m = _____ cm
 b 5.9 km = _____ m
 c 4150 cm = _____ m
 d 860 mm = _____ m

- 24 (8 marks) Find the perimeter of each of these figures.

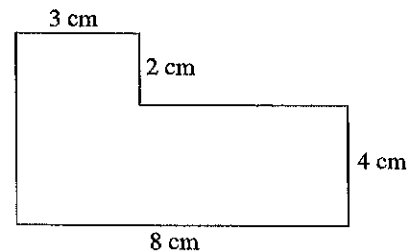
a



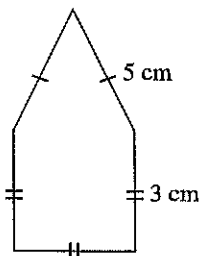
b



c



d

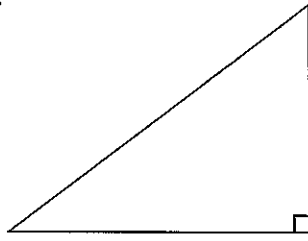


Topic test 8: Length and area *continued*

25 (4 marks) By measurement and calculation, find this triangle's:

a perimeter

b area.

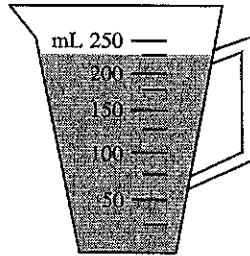


26 (6 marks)

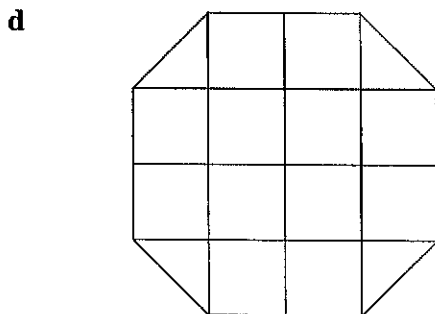
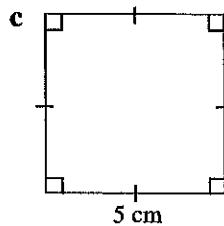
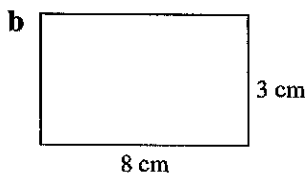
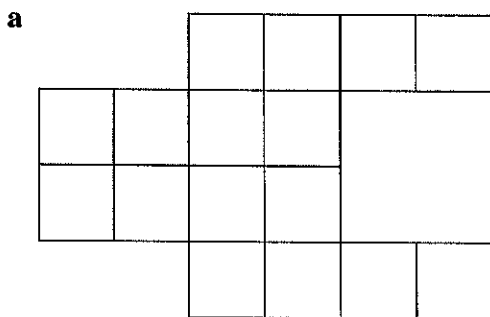
a What amount of water is in this measuring cup, in millilitres?

b What is the size of one unit on the scale of this measuring cup?

c What are the limits of accuracy of this measuring cup?



27 (8 marks) Calculate the area of each figure.



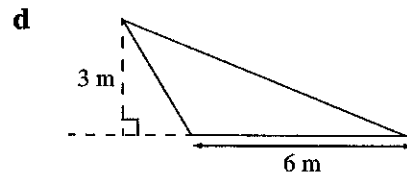
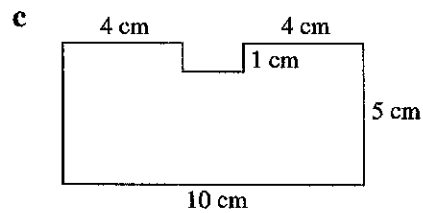
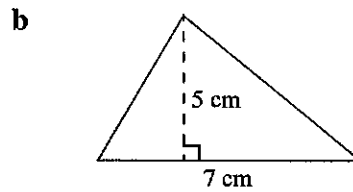
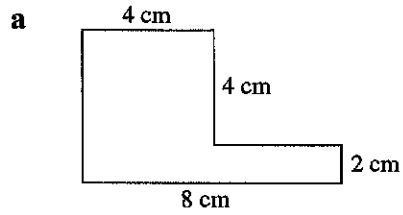
28 (4 marks) Complete:

(a) $6400 \text{ mm}^2 = \underline{\hspace{2cm}} \text{ cm}^2$

(b) $2.75 \text{ km}^2 = \underline{\hspace{2cm}} \text{ m}^2$

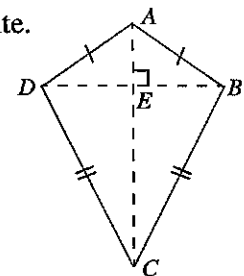
29 (2 marks) If a square has a perimeter of 36 m, what is the length of one of its sides?

30 (9 marks) Calculate the area of each figure.

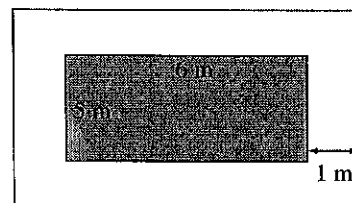


31 (4 marks) $ABCD$ is a kite.

If $DE = EB = 3 \text{ cm}$ and $AC = 7 \text{ cm}$, then calculate the area of the kite.



32 (5 marks) A garden measuring 6 m by 5 m has a pathway 1 m wide around its border.



a Calculate the total area of the pathway.

b If the pathway is made from square concrete slabs 0.5 m wide, how many slabs are needed?

This is the end of the test.
(Use the back for extra working space.)

Worksheet 8-01 Brainstarters 8

Part A: Basic skills (15 marks)

- Simplify $3 \times m \times p \times p$.
- Simplify $-5 + (-7)$
- Draw a 145° angle.
- Complete this Fibonacci pattern:
1, 1, 2, 3, 5, 8, _____
- On a number plane, is the point $(7, -4)$ in the 1st, 2nd, 3rd or 4th quadrant?
- Find the rule for this table of values.

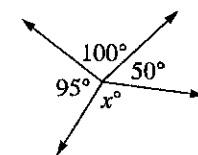
x	0	1	2	3	4
y	0	3	6	9	12

- Draw a factor tree for 72.



- Using your factor tree from Question 7, write 72 as a product of its prime factors.
- How many faces has a rectangular prism?
- Are the opposite faces of a rectangular prism identical?
- Write the correct symbol $<$ or $>$ in the space below:
 -4 _____ -7

- Find the value of x in this diagram.



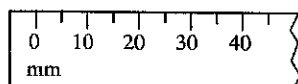
- What is the general name for any shape with four sides?
- Find 7^3 .
- If $b = 4a + 6$, find b if $a = -2$.

Part B: Measurement (25 marks)

- Complete:

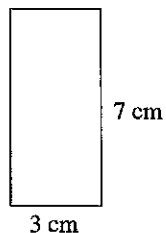
- a $1 \text{ m} = \text{_____ mm}$ b $1 \text{ km} = \text{_____ m}$
 c $1 \text{ cm} = \text{_____ mm}$ d $1 \text{ L} = \text{_____ mL}$

- What is the size of one unit on this ruler?



- For this rectangle, find:

- a its perimeter
 b its area.



- Simplify:

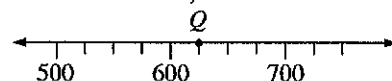
- a 38.52×10 b 0.195×1000
 c $2074 \div 100$ d $435.6 \div 100$

- Draw a square of side length 1 cm.

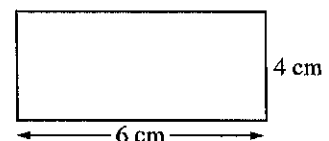
- Simplify:

- a 17×100 b $4000 \div 10$
 c $240 - 30$ d $150 - 45$

- On this number line, what is the value of Q ?



- Find the area of this rectangle.

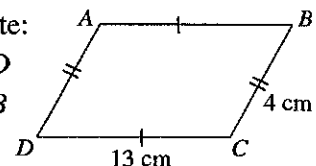


- Simplify:

- a 0.5×10 b 0.5×2
 c $\frac{1}{2} \times 7 \times 2$ d $470\,000 \div 10\,000$

- For this figure, write:

- a the length of AD
 b the length of AB
 c the type of quadrilateral it is.



Challenge (bonus 3 marks)

Sammi, Kerri, Brett and Eddie sat with Mum (M) and Dad (D) around the dinner table.

- Eddie sat with one of his parents.
- Brett sat between Sammi and Kerri and opposite Dad.
- Sammi sat between Brett and Eddie.

Where did each person sit?

