CHAPTER 1

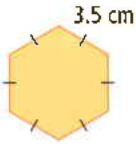
Practice Test

Strand	NSN	MEA	GSS	PA	DMP
Questions	1–8,11–14	1–7,11–14	9, 10		

Multiple Choice

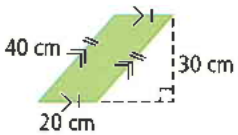
For questions 1 to 5, choose the best answer.

1. What is the perimeter of this shape?



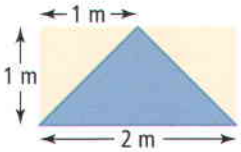
A 3.5 cm **B** 7 cm
C 14 cm **D** 21 cm

2. Matt is adding a piece of wood to the side of a ladder. What is the area of wood that Matt must cut?



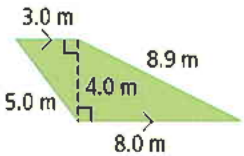
A 300 cm^2 **B** 400 cm^2
C 600 cm^2 **D** 800 cm^2

3. What is the area of the blue region of the flag?



A 0.5 m^2 **B** 1 m^2
C 2 m^2 **D** 4 m^2

4. The perimeter of the trapezoid is



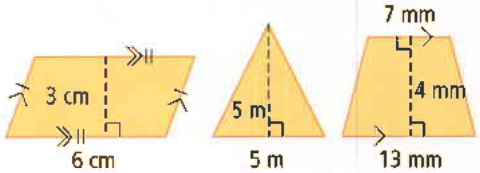
A 12 m **B** 20.9 m
C 24.9 m **D** 28.9 m

5. Look at the trapezoid in question 4. The area is

A 6 m^2 **B** 22 m^2
C 23 m^2 **D** 32 m^2

Short Answer

6. Identify each figure. Then, find its area.



7. Simplify each expression, following the correct order of operations. Show all steps.

a) $5 + 9 \div 3$
b) $12 - (6 - 3)$
c) $3 \times (4 - 2 + 5)$

8. Simplify each expression. Show all steps.

a) $6 + 12 \div 3 - 4 \div 2$
b) $2.4 + 3 \times 1.1 + 4.8 \div (4 \div 0.2)$

9. a) Draw a trapezoid that has a perimeter of 26 cm.
b) Explain how you drew the trapezoid.
c) Draw a different trapezoid with the same perimeter. Compare the areas of the two trapezoids.

10. a) Draw a trapezoid that has an area of 38 cm^2.
b) Calculate the area of the trapezoid you have drawn. How close is it to 38 cm^2?
c) Draw a different trapezoid with the same area. Compare the perimeters of the two trapezoids.

11. a) Draw a two-dimensional shape to match this area calculation.

$A = (a + b) \times h \div 2$

$A = (15 + 9) \times 4 \div 2$

$A = 48$

The area is 48 cm^2.

b) Find the perimeter of your shape.

Extended Response

12. The layout of an outdoor fairground is shown.

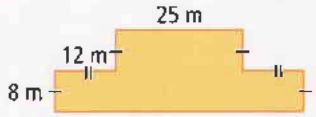
a) Copy the composite shape. Show how you can split it into simpler shapes.

b) Calculate the area of the fairground.

c) Find the length of fencing needed to surround the whole perimeter.

d) Fencing costs $15 per metre. What will it cost for the entire fence?

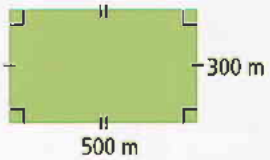
13. a) Find the perimeter of the building shown in the floor plan.



b) Copy the composite shape. Show two different ways you can split it.

c) Find the area using each way to split the shape. Are your answers the same? Explain.

14. The formula for the perimeter of a rectangle is $P = (2 \times l) + (2 \times w)$. Can this also be written as $P = 2 \times (l + w)$? Use the example shown here and at least one other to explain.



Chapter Problem Wrap-Up

1. Use these shapes to design a model go-kart.

- Use at least three different shapes.
- Include at least one composite shape.
- Decide on the sizes of the shapes you will use.
- If you use round wheels, do not include them in any calculations.

Include sketches of your design.

2. Calculate

a) the area of each shape

b) the total area of material you will need

c) the total length of all cuts

Chapter 1

1. **Answer: D (3.5 x 6 = 21)**
2. **Answer: A (30 x 20 x ½ = 300)**
3. **Answer: B (1 x 2 x ½ = 1)**
4. **Answer: C (3 + 5 + 8 + 8.9 = 24.9)**
5. **Answer: B ((3+8)/2 x 4 = 22)**
6. Parallelogram = 6x8 = 18 cm²; Triangle = 5 x 5 x ½ = 12.5 m²; Trapezoid = (7+13)/2 x 4 = 40 mm²
7. **Ans:**
    a. 5 + 9/3 = 5 + 3 = 8
    b. 12 - (6-3) = 12 - 3 = 9
    c. 3 x (4 - 2 + 5) = 3 x (2 + 5) = 3 x 7 = 21
8. **Ans:**
    a. 6 + 12/3 - 4/2 = 6 + 4 - 2 = 8
    b. 2.4 +3 x 1.1 + 4.8 / (4 /.2) = 2.4 + 3.3 + 4.8 / 20 = 5.7 + .24 = 5.94
9. Example trapezoid: bases 8cm and 6cm, sides 6cm and 6cm, 6 → P = 26 cm (areas can differ).
10. Example trapezoid with area 38 cm² (dimensions may vary); same area ≠ same perimeter. (A = (base 1 + base 2)/2 x height))
11. Trapezoid (bases 15 & 9, height 4); Area = 48 cm². Perimeter = 31cm
12. **Ans:**
    a. Small rectangle (18 x 15) + big rectangle (25 x 48)
    b. Area = 15 x 18 + 25 x 48 = 1470 m²
    c. Perimeter = 18 + 15 + 30 + 25 + 48 + 40 = 176m
    d. Cost = 15 x 176 = $2640
13. **Ans:**
    a. Perimeter = 8 + 12 + 8 +25 + 8 + 12 + 8 + 49 = 130m
    b. Option 1: 2 rectangles 1 medium 1 large, Option 2: 3 rectangles 2 small 1 large
    c. Option 1: medium rectangle = 25 x 8 = 200 large rectangle = 49 x 8 = 392, Total = 200 + 392 = 592 | Option 2: small rectangle (2) = 12 * 8 * 2 = 192 large rectangle = 25 x 16 = 400, Total = 592 (they are the same)
14. Yes. Example: 2 x 300 + 2 x 500 = 1600, OR 2(300 + 500) = 2 x 800 = 1600 OR 300 + 300 + 500 + 500 = 1600. All 3 show a 1600 m perimeter based on a 500 m by 300 m rectangle.