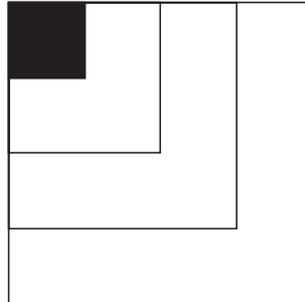


UNIT 13 *Areas*

CSEC Revision Test

1. The shaded square has sides of length 1 cm.
It is enlarged a number of times as shown.



- (a) Complete the table.

<i>Length of side of square</i>	1 cm	2 cm	3 cm	4 cm
<i>Perimeter of square</i>	4 cm	8 cm	12 cm	
<i>Area of square</i>	1 cm ²	4 cm ²		16 cm ²

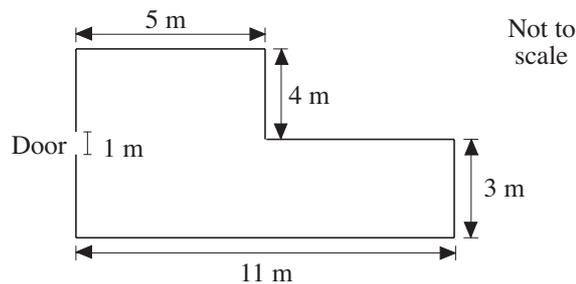
The shaded square continues to be enlarged.

- (b) Complete the following table.

<i>Length of side of square</i>	
<i>Perimeter of square</i>	
<i>Area of square</i>	64 cm ²

(4 marks)

- 2.



The diagram shows the plan of the floor of a room.

- (a) Calculate the perimeter of the room.
- (b) Wooden skirting board is fitted around the perimeter, but not across the doorway.
It costs J\$83 per metre.
Calculate the cost of the skirting board needed for this room.
- (c) Calculate the area of the floor of the room.

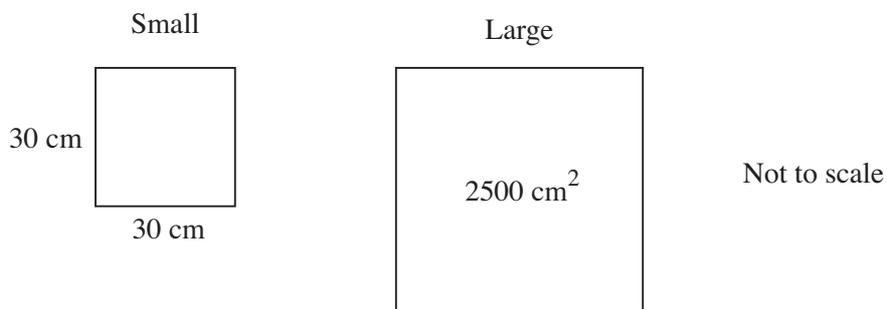
UNIT 13 *Areas*

CSEC Revision Test

- (d) Carpet tiles measure 1 m by 1 m.
 They are sold in boxes each containing 12 tiles.
 Each box costs J\$10 350.
- (i) How many boxes are needed to carpet this floor area?
 (ii) What is their total cost?

(7 marks)

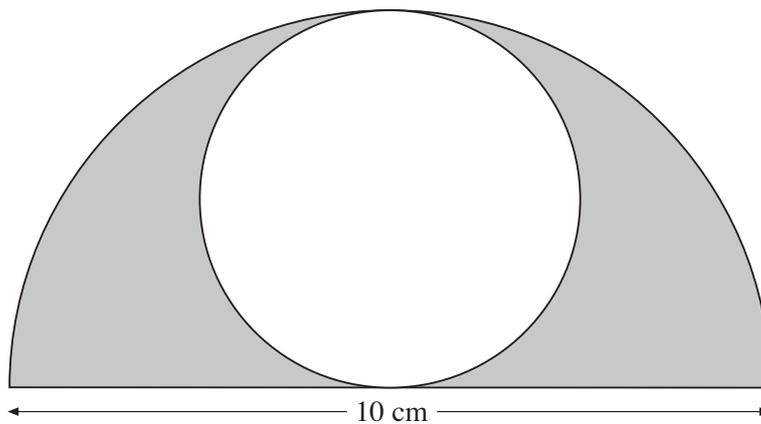
3. A shop sells square carpet tiles in two different sizes.



- (a) What is the area of a small carpet tile?
 (b) What is the length of a side of a large carpet tile?
 (c) The floor of a rectangular room is 300 cm long and 180 cm wide.
 How many **small tiles** are needed to carpet the floor?

(4 marks)

4. A circle fits inside a semicircle of diameter 10 cm as shown.



Calculate the shaded area.

(3 marks)

UNIT 13 *Areas***CSEC Revision Test**

5. A piece of wire is bent in the form of a circle and it encloses an area of 154 cm^2 .

(i) Calculate:

- (a) the radius of the circle
 (b) the circumference of the circle.

$$\left(\text{Use } \pi = \frac{22}{7}\right)$$

The same piece of wire is then bent in the form of a square.

(ii) Calculate the area enclosed by the square.

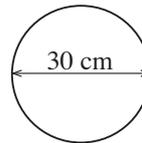
(CXC)
(6 marks)

6. The figures shown below, **not drawn to scale**, represent the cross sections of two circular pizzas. Both pizzas are equally thick and contain the same toppings.



Small pizza

Diameter = 15 cm



Medium pizza

Diameter = 30 cm

(a) Is a medium pizza twice as large as a small pizza?

Use calculations to support your answer.

(b) A medium pizza is cut into 3 equal parts, and each part is sold for \$15.95.
 A small pizza is sold for \$12.95.

Which is the better buy?

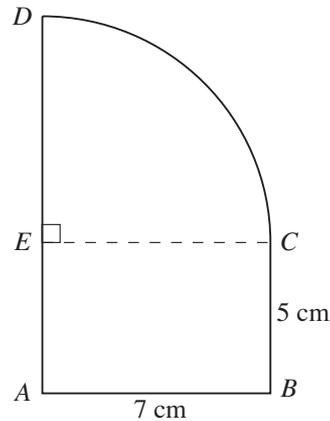
Use calculations to support your answer.

(CXC)
(10 marks)

UNIT 13 Areas

CSEC Revision Test

7. The diagram below, **not drawn to scale**, shows a rectangle $ABCE$ joined along the edge EC to a quarter circle ECD , so that AED is a straight line. $AB = 7$ cm and $BC = 5$ cm.



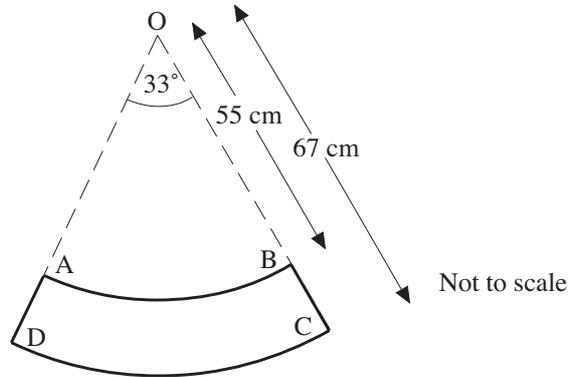
- (a) Write down the length of AD .
- (b) Use $\pi = \frac{22}{7}$.
Calculate
- the length of the arc CD
 - the perimeter of the figure $ABCDE$
 - the area of the figure $ABCDE$.
- (c) If the diagram is drawn to a scale of 1:100, find the actual area of rectangle $ABCE$ in square metres.

(CXC)
(10 marks)

UNIT 13 Areas

CSEC Revision Test

8. A lampshade is made from the piece of material ABCD shown.
 Angle $AOB = 33^\circ$, $OB = 55$ cm, $OC = OD = 67$ cm.



- (a) Calculate the area of the sector OAB. (2 marks)
- (b) Calculate the area ABCD. (2 marks)
- (c) Calculate the arc length AB. (2 marks)

When the lampshade is made the ends AD and BC are joined together.

The arcs AB and DC form two circles.

- (d) Calculate the radius of the circle formed by the arc AB. (2 marks)

TOTAL MARKS: 52

UNIT 13 Areas

CSEC Revision Test

ANSWERS

1. (a) Perimeter = 16 cm B1
Area = 9 cm^2 B1
(b) Length = 8 cm B1
Perimeter = 32 cm B1 (4 marks)
2. (a) $5 + 4 + 3 + 11 + 7 + 6 = 36 \text{ cm}$ B1
(b) $35 \times 83 = \text{J\$ } 2905$ M1 A1
(c) Area = $(5 \times 7 + 6 \times 3) \text{ m}^2 = 53 \text{ m}^2$ M1 A1
(d) (i) 5 boxes B1
(ii) J\$ 51750 B1 (7 marks)
3. (a) 900 cm^2 B1
(b) 50 cm B1
(c) Need $10 \times 6 = 60$ small tiles M1 A1 (4 marks)
4. Shaded area = $\frac{1}{2}\pi 5^2 - \pi\left(\frac{5}{2}\right)^2$ M1 A1
= $\frac{25}{4}\pi \approx 19.6 \text{ cm}^2$ A1 (3 marks)
5. (i) (a) $154 = \pi r^2$; $r^2 = \frac{154}{(22\pi)} = 49$ M1
 $r = 7 \text{ cm}$ A1
(b) circumference = $2\pi 7 = 14 \times \frac{22}{7} = 44 \text{ cm}$ M1 A1
(ii) Side length = 11 cm M1
Area enclosed = 121 cm^2 A1 (6 marks)
6. (a) Small pizza area = $\pi\left(\frac{15}{2}\right)^2 = \frac{225}{4}\pi$ M1 A1
Medium pizza area = $\pi(15)^2 = 225\pi$ M1 A1
So medium pizza is 4 times as large as small pizza,
not twice as large. B1
(b) Total cost for medium pizza = $3 \times \$15.95 = \47.85 M1 A1
 $4 \times$ cost of small pizza = $4 \times \$12.95 = \51.80 M1 A1
So the medium pizza is the better buy. B1 (10 marks)

UNIT 13 Areas**CSEC Revision Test****ANSWERS**

7. (a) $AD = 7 + 5 = 12$ cm B1
- (b) (i) $CD = \frac{1}{4} \cdot (2\pi \times 7) = 11$ cm M1 A1
- (ii) Perimeter = $(11 + 5 + 7 + 5 + 7)$ cm = 35 cm M1 A1
- (iii) Area = $(7 \times 5) + \frac{1}{4} \times (\pi \times 7^2)$ M1 A1
- $$= 35 + \frac{77}{2} = 73\frac{1}{2} \text{ cm}^2$$
- A1
- (c) Actual area = $\frac{147}{2} \times 100 \times 100 \text{ cm}^2$ M1
- $$= \frac{147}{2} \text{ m}^2$$
- A1 (10 marks)
8. (a) Area = $\frac{33}{360} \times \pi \times 55^2 = 871.1 \text{ cm}^2$ M1 A1
- (b) Area = $\frac{33}{360} \times \pi \times (67^2 - 55^2) = 421.6 \text{ cm}^2$ M1 A1
- (c) $AB = \frac{33}{360} \times 2\pi \times 55 = 31.68$ cm M1 A1
- (d) $2\pi r = 31.68 \Rightarrow 5.04$ cm M1 A1 (8 marks)

(TOTAL MARKS: 52)