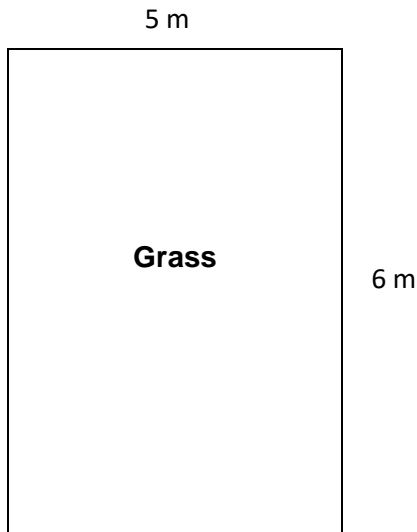


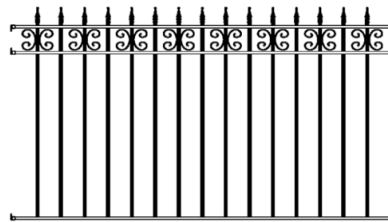
National 3 Lifeskills

Shape, Space & Measures

1. A new rectangular garden is shown below:



A fence is to be placed around the garden.

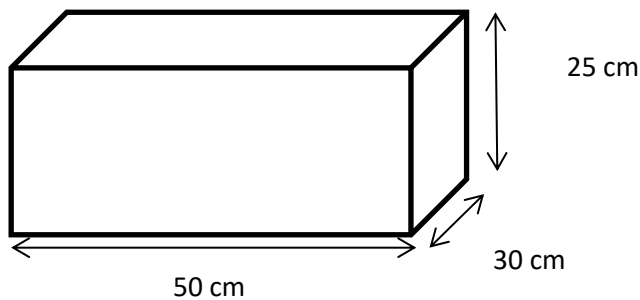


(a) Calculate the length of fencing needed.

(b) The whole garden is to be covered in grass.

Calculate the area of the garden to be covered in grass.

2. A fish tank is 50 cm long, 30 cm wide and 25 cm high, as shown.



(a) What formula would you use to calculate the volume of the tank?

(b) Calculate how much water you need to fill the tank to the top.

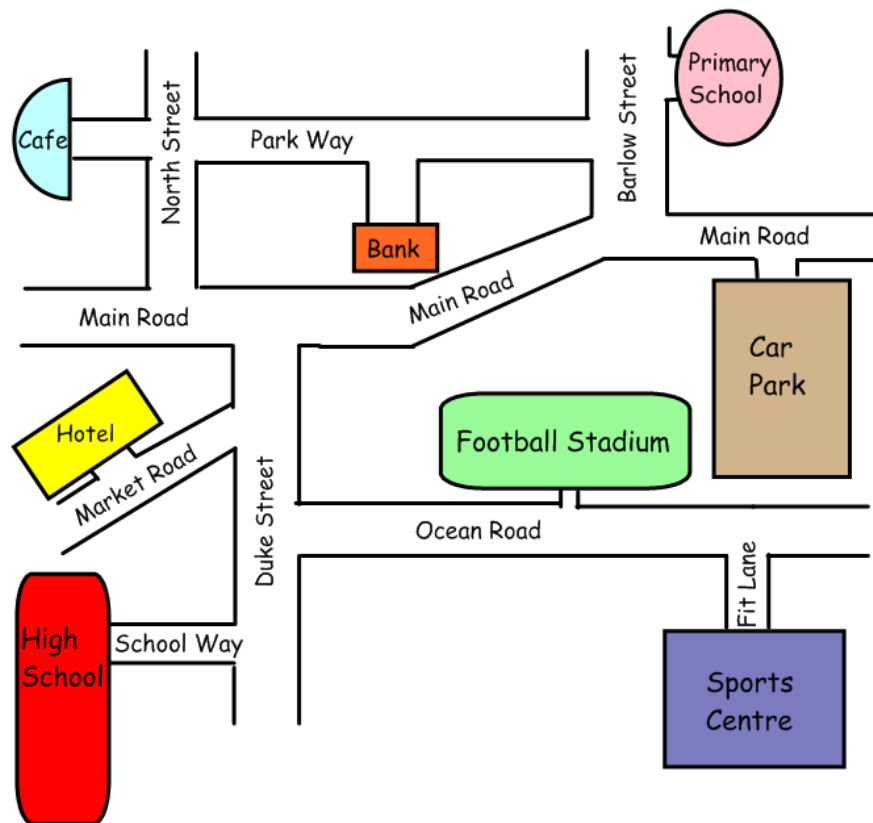
(c) Another fish tank holds twice the amount of water. How much water does this tank hold?

Practice 1

3. You have been given the following directions to help you find your way from the Sports Centre to the Café.

(a) On the map draw a line to show the route. Follow these directions:

- ◆ Come out of Sports Centre on Fit Lane
- ◆ Turn left onto Ocean Road
- ◆ Turn right and go up Duke Street
- ◆ Turn left onto the Main Road
- ◆ Turn right onto North Street
- ◆ Turn left into Café



1 cm = 100 m

(b) Estimate the distance you have to walk.

(c) Write down directions to get from the High School to the Bank.

Practice 1

4. The picture below is of a toy car based on a real model.



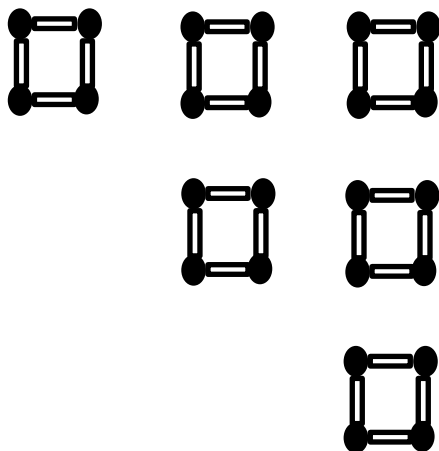
The length of the toy car is 4 centimetres.

The scale of the toy car to the real model is:

1 centimetre represents 50 centimetres

Find the actual length of the real model.

5. A pattern is made using matchsticks:-



(a) Draw the next pattern in the sequence.

(b) Complete the table below:

Number of squares	1	2	3	4	5	6
Number of matches	4	8				

(c) How many matches would be needed for 10 squares?

Practice 1

6. Jack starts watching a movie at 5.45pm.
The movie lasts for 2 hours and 20 minutes.
What time will the movie finish?
7. Rebecca is going from the city centre to the airport by bus.
The buses run at regular intervals 24 hours a day.
Part of the bus timetable is shown below:

Bus timetable

Depart: City centre	2100	2110	2120					
Arrive: Airport	2125	2135	2145					

- (a) Complete the timetable to show the departure and arrival times of the next five buses.
- (b) Rebecca has decided to catch the bus which leaves the city centre at 0835.
What time will she arrive at the airport?

Practice 1

Answers

Q1a	<ul style="list-style-type: none"> • $5 + 6 + 5 + 6 = 22$ metres 														
Q1b	<ul style="list-style-type: none"> • $5 \times 6 = 30 \text{ m}^2$ 														
Q2a	<ul style="list-style-type: none"> • $V = lbh$ or $V = l \times b \times h$ 														
Q2b	<ul style="list-style-type: none"> • $50 \times 30 \times 25$ • 37500 • cm^3 														
Q2c	<ul style="list-style-type: none"> • $2 \times 37500 = 75000 \text{ cm}^3$ (ignore units) 														
Q3a	<ul style="list-style-type: none"> • Check paper 														
Q3b	<ul style="list-style-type: none"> • Approximately 15cm = 1500m (must be in metres) 														
Q3c	<ul style="list-style-type: none"> • Correct directions 														
Q4	<ul style="list-style-type: none"> • 200 cm 														
Q5a	<ul style="list-style-type: none"> • 4 square shapes with 16 matchsticks 														
Q5b	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Design Number</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Number of matchsticks</td> <td>4</td> <td>8</td> <td>12</td> <td>16</td> <td>20</td> <td>24</td> </tr> </table>	Design Number	1	2	3	4	5	6	Number of matchsticks	4	8	12	16	20	24
Design Number	1	2	3	4	5	6									
Number of matchsticks	4	8	12	16	20	24									
Q5c	<ul style="list-style-type: none"> • 40 														
Q6	<ul style="list-style-type: none"> • 8.05pm 														
Q7a	<ul style="list-style-type: none"> • Top row - 2130, 2140, 2150, 2200, 2210 • Bottom Row - 2155, 2205, 2215, 2225, 2235 														
Q7b	<ul style="list-style-type: none"> • 0900 														