

## Geometry and Measurement Practice 2

- 1) To work out the time  $T$  taken in minutes to walk a distance  $d$  in miles you use the formula

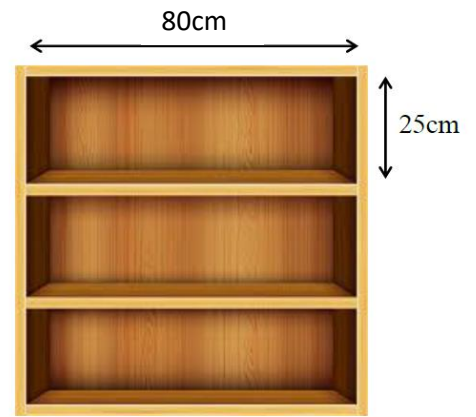
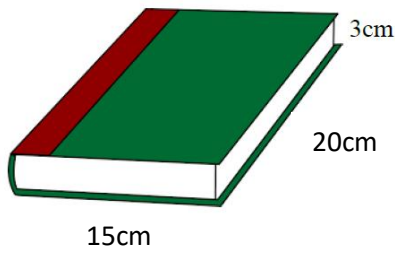
$$T = d \div 0.05$$

- (a) Work out the time it would take to walk 10 miles. (2)
- (b) William needs to walk for at least 65 minutes. How many more minutes does he need to walk? (2)

- 2) A hiker walks 16 miles on a bearing of  $125^\circ$  from Dumfries to New Abbey. The hiker then walks 12 miles on a bearing of  $060^\circ$  from New Abbey to Glencaple.

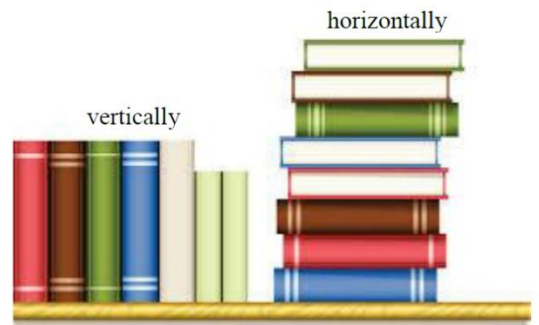
- (a) Make a scale drawing of the route using a scale of 1 cm represents 2 miles. (3)
- (b) How far, in miles, is the direct route from Glencaple to Dumfries? (2)

3) A book has a length of 20cm, a width of 15cm and a depth of 3cm as shown below.



Nikki has many of these books and wants to stack them in a bookshelf as shown below. It has 3 shelves each with a length of 80cm and a height of 25cm.

The book can be stacked either horizontally or vertically as shown.



- (a) What is the greatest number of books that will fit into the bookshelf if they are to be placed
- (i) Vertically?
  - (ii) Horizontally?

(5)

(b) Which way should Nikki stack the books to get the most number in the bookshelf? (1)

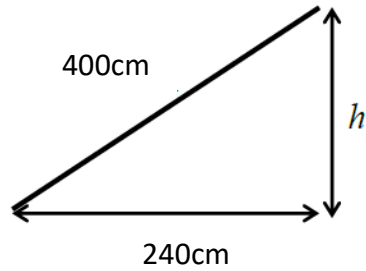
4) A smarties tube is supposed to contain  $16 \pm 2$  smarties. The number of smarties of 16 tubes are counted and shown below.

14, 16, 14, 15, 11, 17, 18, 14, 16, 16, 17, 13, 14, 15, 17, 18

Which of these boxes of matches would be outside the tolerance?

(2)

5) Below is the cross section of a bicycle ramp.

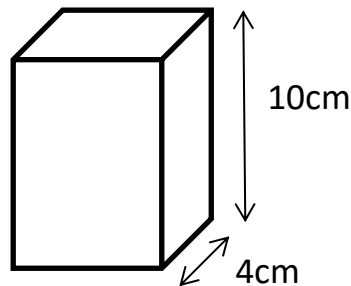


(a) Calculate the height  $h$  of the bicycle ramp. (3)

(b) If the gradient of a bicycle ramp is more than 0.8 then it is regarded as being dangerous.

Is the bicycle ramp dangerous? Justify your answer. (3)

6) Catherine has started a small business making honey. Each jar is a square based cuboid as shown:

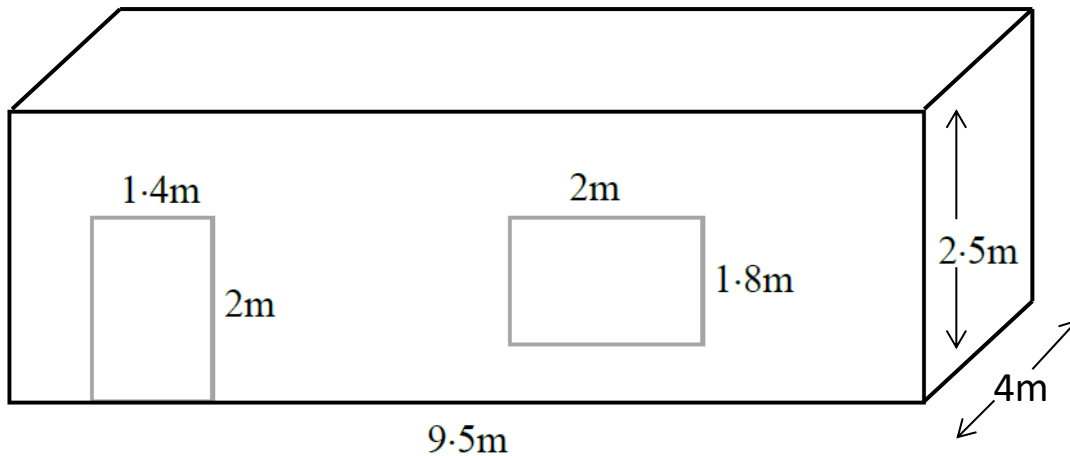


She buys honey in 8 litre tubs.

(a) How many jars of honey can she fill from one tub? (5)

(b) If Catherine halves the volume of honey in her jars, how many will she be able to make with one tub? (2)

7) Nicole is planning to wallpaper her dining room wall as shown below.



Paint: 1 litre tin covers  $8\text{m}^2$ .

- (a) What is the total area of the bedroom walls? (4)
- (b) What volume of paint must Nicole buy to paint the walls of her dining room? (1)
- (c) Paint is sold in 1 litre tins. How many tins will Nicole need to buy? (1)
- (d) Each tine costs £7.49. What will the cost of painting her dining room be? (1)
- (e) Nicole wishes to put skirting around the edge of the room (excluding the door). Calculate the total length of skirting needed? (2)