JUNIOR SECONDARY CERTIFICATE

MATHEMATICS   **1200/2**

PAPER 2 (Structured Questions)   2 hours

Marks 85   **2017**

Additional Materials: Non-programmable calculator

INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Candidates answer on the Question Paper in the spaces provided.
- Write your Candidate Number and Name in the spaces at the top of this page.

- Answer **all** the questions. **All working must be shown clearly.**
- Write in dark blue or black pen.
- You may use a non-programmable calculator.
- Do not use correction fluid.
- Do not write in the margin *For Examiner's Use*.

- If an answer is not exact, it should be rounded to **one** decimal place and for money give your answer to **two** decimal places.
- The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
Marker	
Checker	

This document consists of **14** printed pages.

Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

1 Anna is making up a 330 m*l* non-alcoholic cocktail mixture.

To make up the cocktail she will need the following:

80 m*l* of lime, 50 m*l* of lemonade, 200 m*l* of soda water.

(a) (i) Write soda water as a common fraction of the cocktail mixture in its lowest term.

Answer **(a) (i)** .... [2]

(ii) Calculate the percentage of lemonade in the cocktail.

Answer **(a) (ii)** ....% [2]

(b) Anna decided to make up another non-alcoholic cocktail of 350 m*l*.

Calculate the percentage increase of the volume of cocktail.

Answer **(b)** .... % [3]

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2 (a) (i) Write 60 as a product of its prime factors.

Answer **(a) (i)** .... [2]

(ii) Determine the lowest common multiple (LCM) of 15 and 60.

Answer **(a) (ii)** .... [1]

(b) A list of numbers is given below.

21   22   23   24   25   26   27   28

Write down a

(i) prime number,

Answer **(b) (i)** .... [1]

(ii) square number,

Answer **(b) (ii)** .... [1]

(iii) power of 3,

Answer **(b) (iii)** .... [1]

(iv) factor of 208.

Answer **(b) (iv)** .... [1]

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3 Use =, < or > to make the following statements true.

(a) 1.5   .... 105%

(b) $\frac{3}{8}$ 0.5

(c) − 4. 5 .... − 4.25   [3]

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4 Given   9.89 − 10.2 ÷ 4.93

(a) Rewrite the above expression by rounding off each number to the nearest whole number.

Answer**(a)** .... − .... ÷ .... [1]

(b) Use your answer in **(a)**, to calculate an estimate answer to the expression. Show your working.

Answer **(b)** .... [2]

[Turn over

5 **(a)** The diagram shows a floor of room **A** covered with 20 tiles of which 5 are broken.
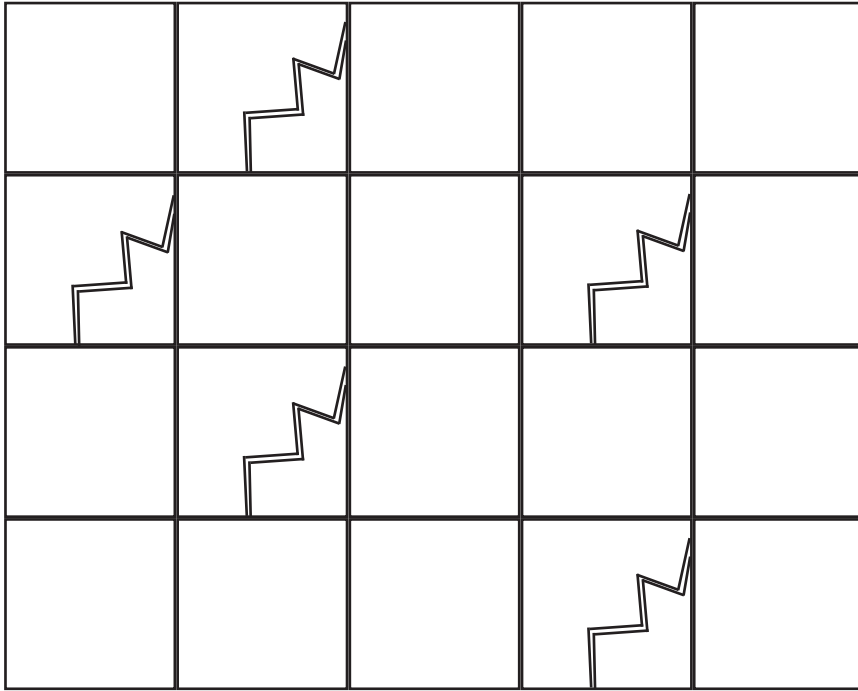
Write down

(i) the ratio of broken tiles to the total number of tiles in the room.
Write your answer in its simplest form.

Answer **(a) (i)** .... : .... [2]

(ii) the fraction of tiles that are not broken in the room in its simplest form.

Answer **(a) (ii)** .... [1]

(b) There are 60 tiles that need to be divided between room **B** and room **C** in the ratio 3 : 2 respectively.

Calculate the number of tiles in room **B**.

Answer **(b)** .... [2]

6 Below is the pay slip for Ms Vries.

| PAY Advice date: 20 July 2017 |
| Employee Name: **Ms Vries** |
| Employee code: V08029 |

Basic salary: N$8 540.00

Deductions

Income tax: N$1 281.00
Medical Aid: N$540.17
Union: N$100.00
Pension fund: **(b)** N$ ....
Social Security: N$54.00

Total deductions: **(c)** N$ ....

Net salary: N$5 625.60

(a) Calculate the percentage of income tax that Ms Vries pays on her basic salary.

Answer **(a)** .... %   [2]

(b) Ms Vries contributes 11% of her basic salary to a pension fund.
Calculate the amount paid to the pension fund.

Answer **(b)** N$.............................   [2]

(c) Find the amount of total deductions taken from her salary.

Answer **(c)** N$.............................   [1]

[Turn over

7 The selling price of a washing machine is N$3 450.50.
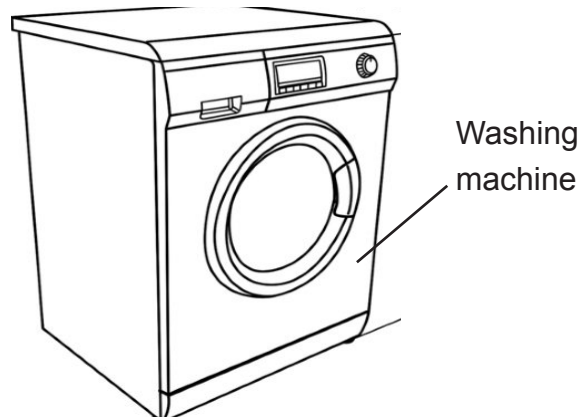
Washing
machine

The washing machine can also be bought on hire purchase by paying a 20% deposit and 12 monthly instalments of N$350.00.

Calculate

(a) the deposit amount to be paid on the machine,

Answer **(a)** N$.............................. [2]

(b) the amount for the 12 monthly instalments,

Answer **(b)** N$ .... [2]

(c) the total price paid on the washing machine if its bought on hire purchase,

Answer **(c)** N$.............................. [1]

(d) the difference between the selling price and the price on hire purchase.

Answer **(d)** N$.............................. [1]

8 **(a)** The square with a side of 7 cm is given below.

7 cm
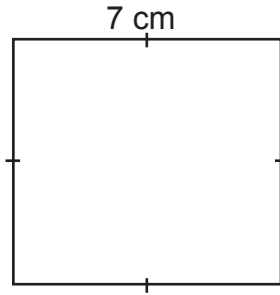
Find the perimeter of the square.

Answer **(a)** .... cm [1]

(b)

A

NOT TO SCALE

h

B

5 cm

C
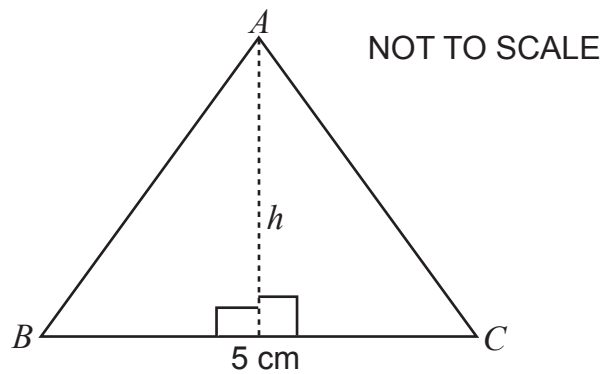
The area of triangle ABC is 30 cm² .

Calculate its height (h).

Answer **(b)** ....cm [2]

[Turn over

(c)

7 cm
13 cm
6 cm
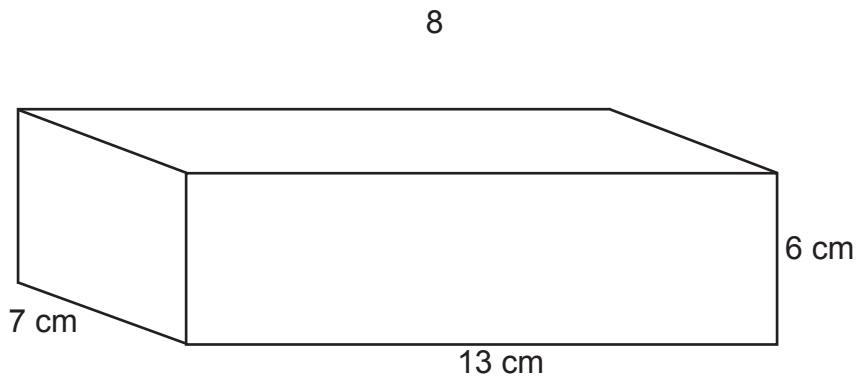
Calculate the surface area of the cuboid given above.

Answer (c) .... cm² [3]

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9 Udo bought a cylindrical juice container.
The container has a radius of 10 cm and a height of 30 cm.

10 cm   NOT TO SCALE

30 cm
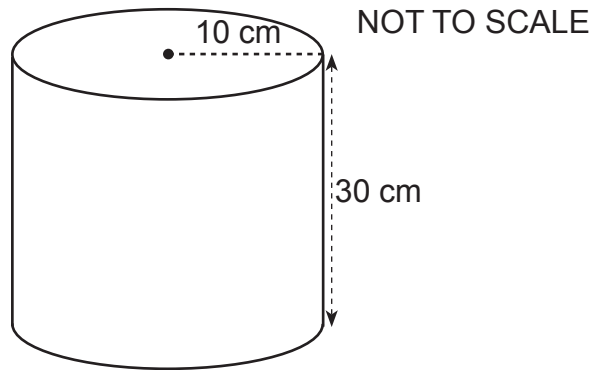
(Use $\pi = \frac{22}{7}$ or 3.142)

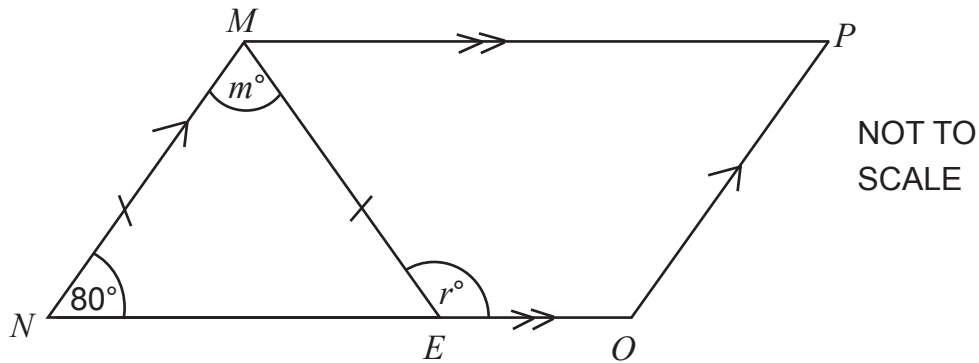**(a)** Calculate the circumference of circular top of the juice container.

Answer **(a)** ....cm [2]

(b) Work out the volume of the juice container.

Answer **(b)** .... cm³ [2]

(c) Convert the answer in **(b)** to litres.

Answer **(c)** .... l [1]

10 **(a)** In the diagram below, $MN = ME$. Line MN is parallel to PO and line NO is parallel to MP.

NOT TO SCALE

Calculate

(i) the value of m,

Answer **(a) (i)** m = ...° [2]

(ii) the value of r.

Answer **(a) (ii)** r = ...° [2]

(b) The diagram below shows a regular hexagon with an exterior angle of 60°.
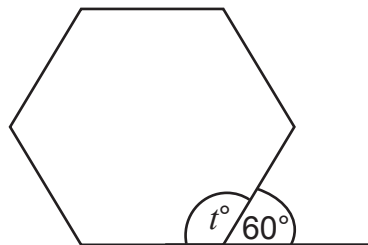
(i) Calculate the size of the value of t.

Answer **(b) (i)** t = ...° [2]

(ii) Work out the sum of interior angles of a regular hexagon.

[Turn over

Answer **(b) (ii)**.............................° [2]

11
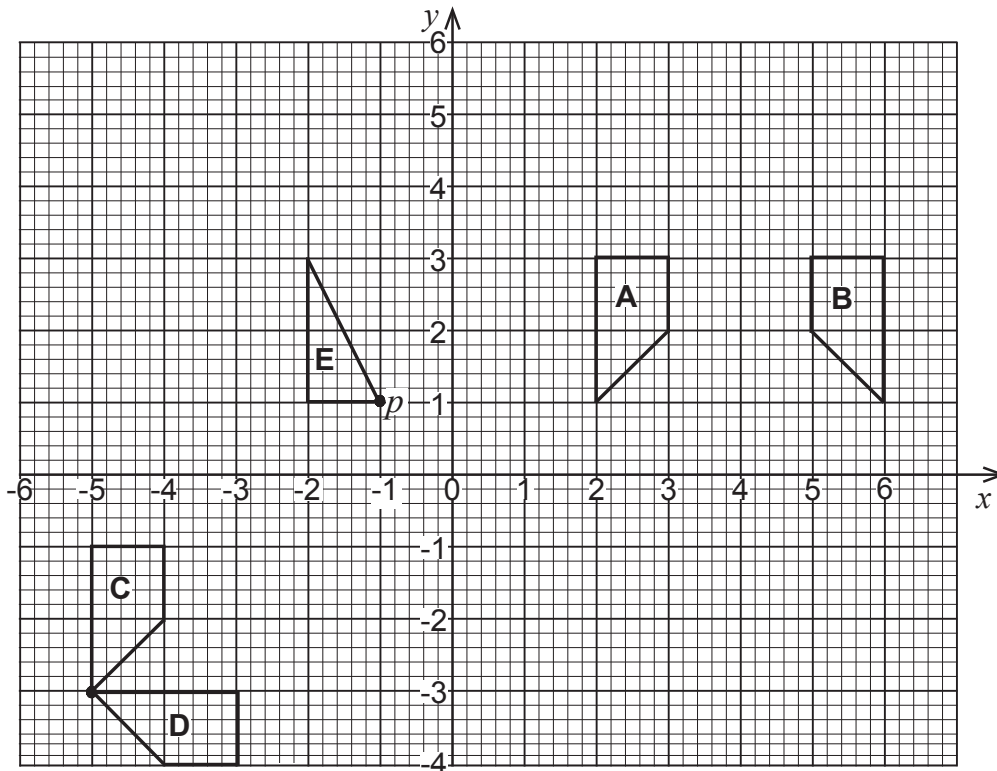
(a) Describe fully the single transformation that maps, shape **A** onto shape **B**.

Answer **(a)**.. [2]

(b) Shape **D** is a rotation of shape **C**.
Write down the
(i) angle of rotation,

Answer **(b) (i)** ....° [1]

(ii) the coordinates of the centre of rotation.

Answer **(b) (ii)** (........... , ...) [2]

(c) Enlarge triangle **E** with the scale factor 2, using centre p. Label the image **F**. [2]

12 The length of a rectangular garden is 5 m more than its width x.
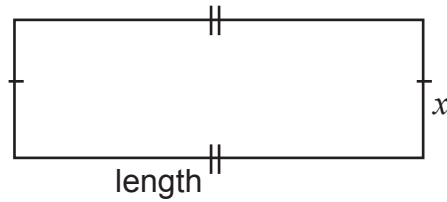
length

(a) Write down the length of the garden in terms of x.

Answer **(a)** .... m   [1]

(b) The perimeter of the garden is 50 m.
Write down an equation in terms of x to represent this information.

Answer **(b)** .... [1]

(c) Solve the equation in **(b)** to find the width of the garden.

Answer **(c)** x = ... m   [2]

13 If $x = 3$ and $y = -2$.

Find the value of $\frac{6x}{y}$.

Answer..   [2]

14 Represent the inequality $-1 < x \leq 3$ on the number line below.   [2]

-4   -3   -2   -1   0   1   2   3   4   5

[Turn over
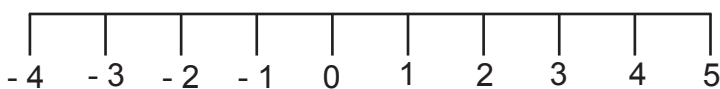
15 Two lines, **L**$_1$ and **L**$_2$ are drawn on the grid below.
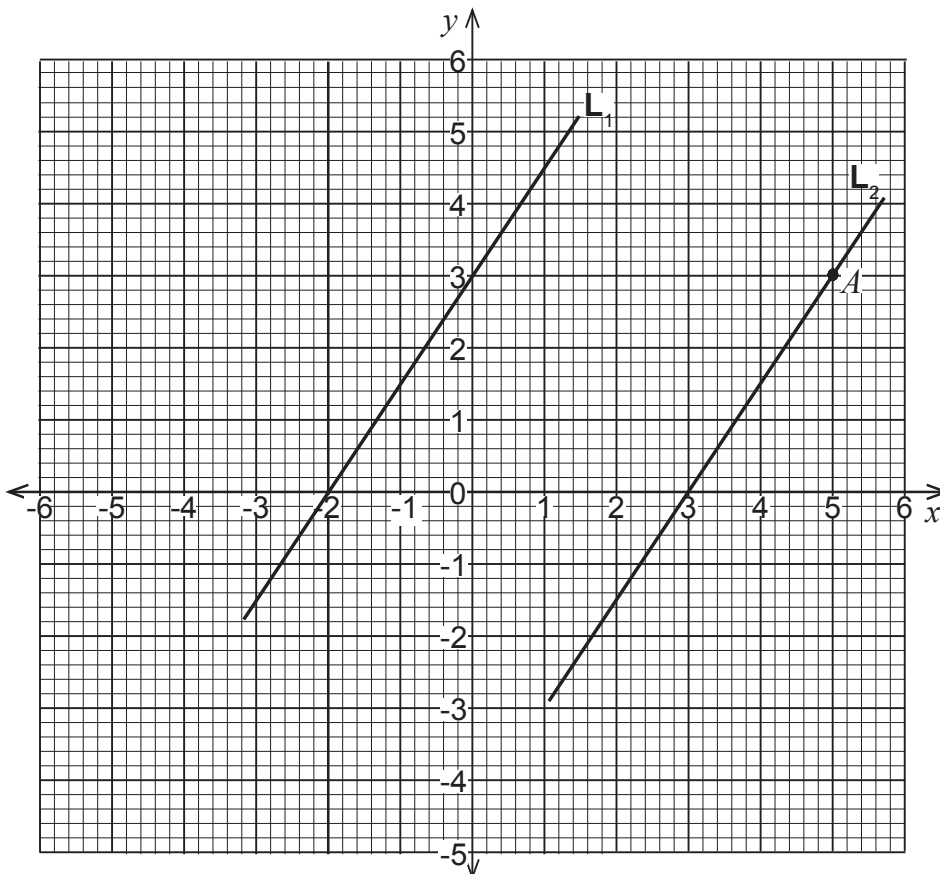
(a) Write down the coordinates of point A.

Answer **(a)** (.............. , ...)   [2]

(b) Write down the y-intercept of **L**$_1$.

Answer **(b)** ....   [1]

(c) Calculate the gradient of line **L**$_2$.

Answer **(c)** ....   [2]

16 The table below shows different methods of transport used daily by learners to travel to school.

Method	Bus	Taxi	Car	Bicycle	Walk
Frequency	12	2	10	6	18

(a) Work out the total number of learners.

Answer **(a)** .... [1]

(b) Which method is mostly used by learners to travel to school?

Answer **(b)** .... [1]

(c) Calculate the angle of the sector on a pie chart representing learners who walk to school.

Answer **(c)** ....° [2]
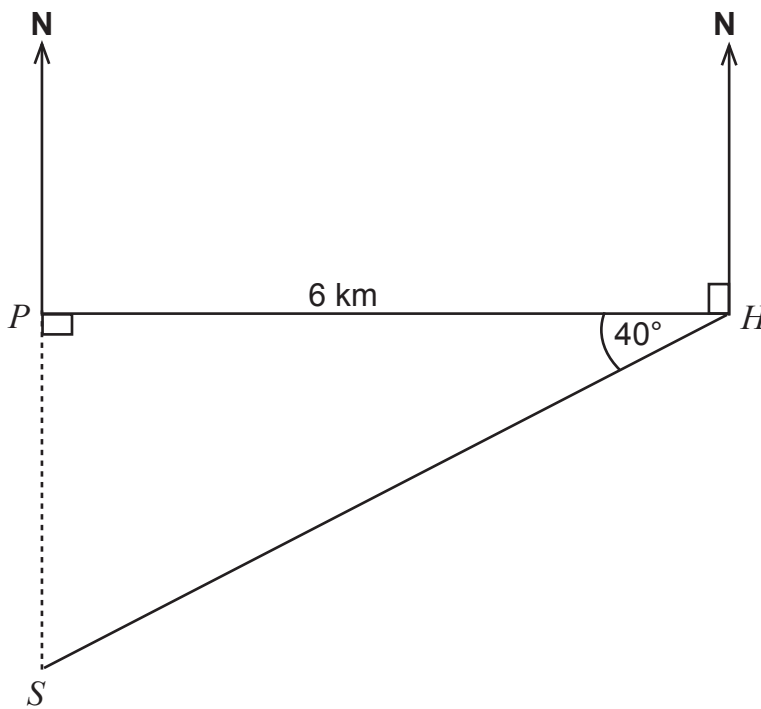
(d) On the bar chart below, draw the bars representing the learners who travel by taxi and by bicycle.
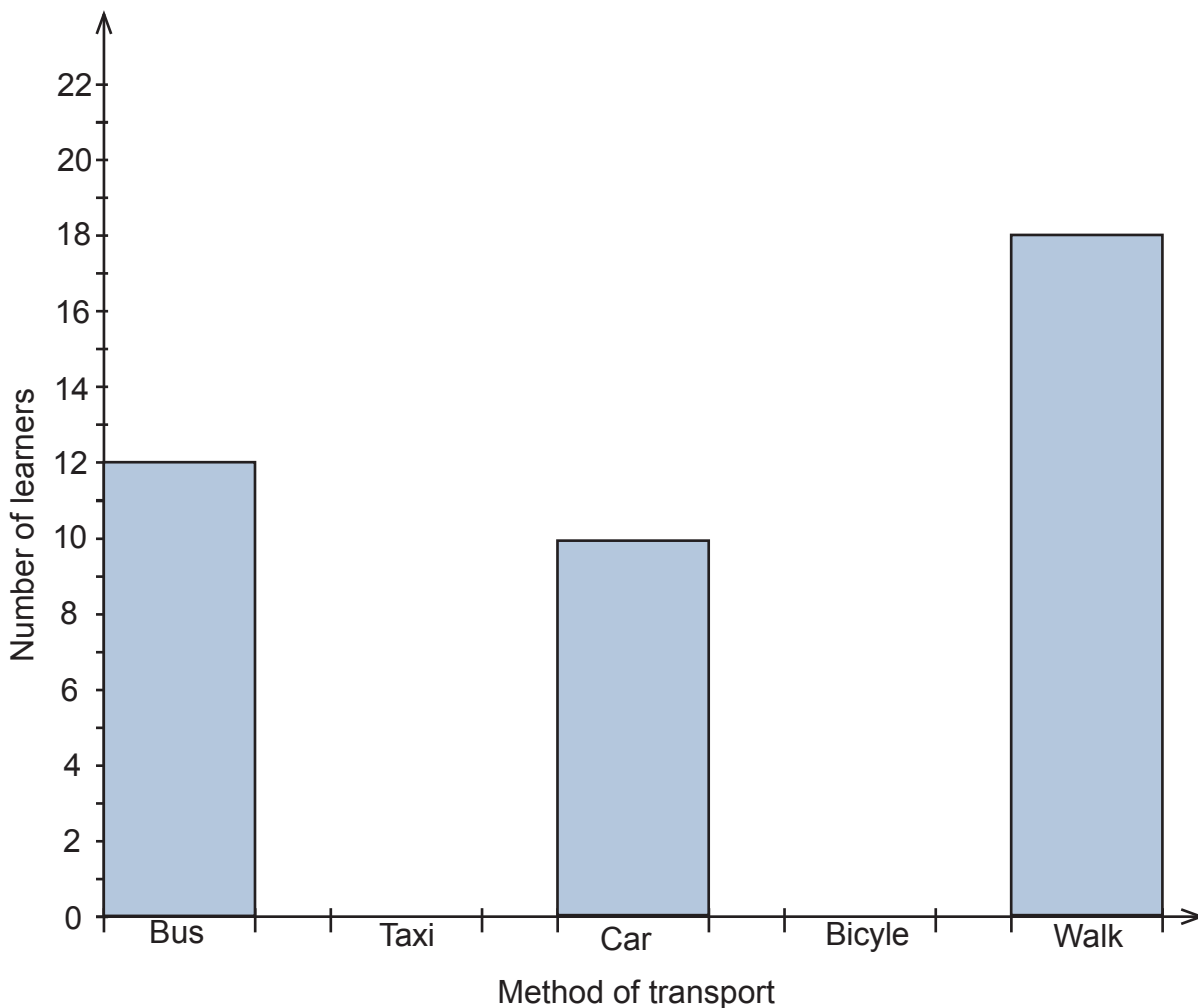
[2]

17 The police station, P, is 6 km due west from the hospital, H.

Angle $PHS = 40°$. The shop, S, is due south of the police station.

NOT TO SCALE

(a) Write down the bearing of S from H.

Answer **(a)** ....° [2]

(b) Calculate the distance of P from S.

Answer **(b)** .... km [2]