| CANDIDATE NAME | |
|---|---|

| CENTRE NUMBER | | | | | | CANDIDATE NUMBER | | | | |
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**MATHEMATICS**  **6880/01**

Paper 1  Non-Calculator Short-Answer Questions (Core and Extended)   **May/June 2012**

**1 hour 30 minutes**

Candidates answer on the Question Paper.

Additional Materials:   Geometrical instruments
                        Tracing paper (optional)

## READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen in the spaces provided on the Question Paper.
You may use a pencil for any diagrams or graphs.
Do **not** use staples, paper clips, highlighters, glue or correction fluid.
You are not allowed to use a calculator.

Answer **all** questions.
If working is needed for any question it must be shown below that question.
The number of marks is given in brackets [  ] at the end of each question or part question.
The total of the marks for this paper is 60.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures.
Give answers in degrees to one decimal place.

| For Examiner's Use | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
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| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| **Total** | |

This document consists of **17** printed pages and **3** blank pages.

**1** Express 0.05473 correct to

**(a)** 3 significant figures,

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

**(b)** 3 decimal places.

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

**2** **(a)** Measure and write down angle *ABC*.

*C*

*A* ————————————— *B*
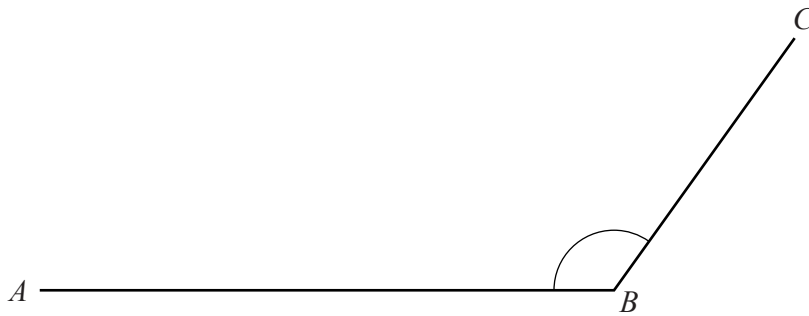
*Answer (a)* ........................................ ° [1]

**(b)** Convert 2.3 m to centimetres.

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

**3** A group of people was asked to name their favourite drink.
The table below shows the information gathered.

|  | TYPES OF DRINK | | |
|---|---|---|---|
|  | **Marula Juice** | **Pawpaw Juice** | **Lemon Juice** |
| **Number of children** | 10 | 20 | 8 |
| **Number of adults** | 20 | 10 | 15 |

**(a)** How many adults liked Marula juice?

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

**(b)** Which drink was most popular amongst children?

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

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**4 (a)** Insert one of the symbols $<$, $=$ or $>$ to make the following statement true.

$$\frac{2}{5} \quad .................... \quad 0.507$$
[1]

**(b)** Find the next term in this sequence.

4        9        15        22        …

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

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**5** **(a)** State the order of this matrix.

$$\begin{pmatrix} -1 & 3 & 5 \\ -7 & 0 & 2 \end{pmatrix}$$

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

**(b)** Work out $2\begin{pmatrix} 4 \\ -1 \end{pmatrix}$.

*Answer (b)* $\begin{pmatrix} & \\ & \end{pmatrix}$ [1]

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**6** **(a)** There are 60 people in a bus.
80% of the people in the bus are adults.

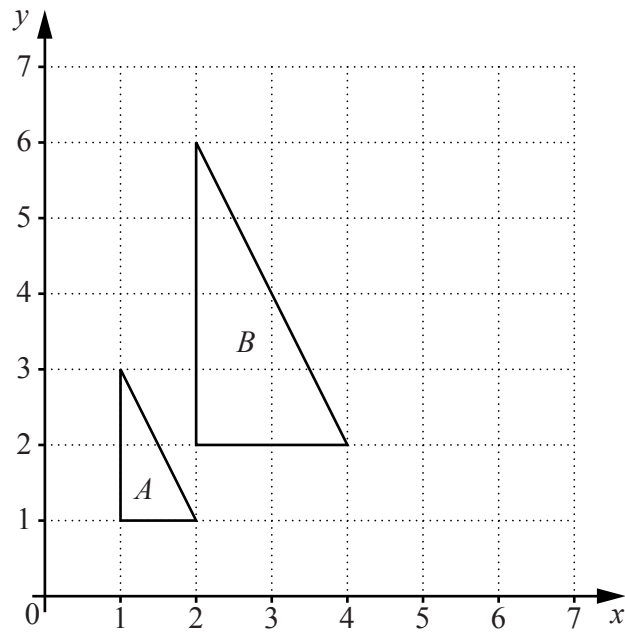Find the number of children in the bus.

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

**(b)** Musa buys a jacket for E 250.
He is charged an extra 10% as value added tax.

Calculate the total amount of money Musa pays for the jacket.

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

---

**7**   Triangle *A* and triangle *B* are drawn on the grid below.



Describe the **single** transformation which maps triangle *A* onto triangle *B*.

*Answer* .............................................................................................................................[2]

**8**   Work these out.

   **(a)**   $\sqrt{0.09}$

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

   **(b)**   $\sqrt{2\frac{1}{4}}$

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

   **(c)**   $-4 \times 5 \times (-2)$

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

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**9**   A bucket can hold 12 litres of water.
       A jug can hold $\frac{4}{5}$ litre of water.

       How many jugs can be filled from one full bucket of water?

                                                      *Answer*  ..................................................[3]

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**10** **(a)** Complete the table for the equation $y = 2x - 1$.

| $x$ | $-1$ | $0$ | $2$ |
|-----|------|-----|-----|
| $y$ |      |     | $3$ |

[2]

**(b)** Draw the graph of $y = 2x - 1$ on the grid below.
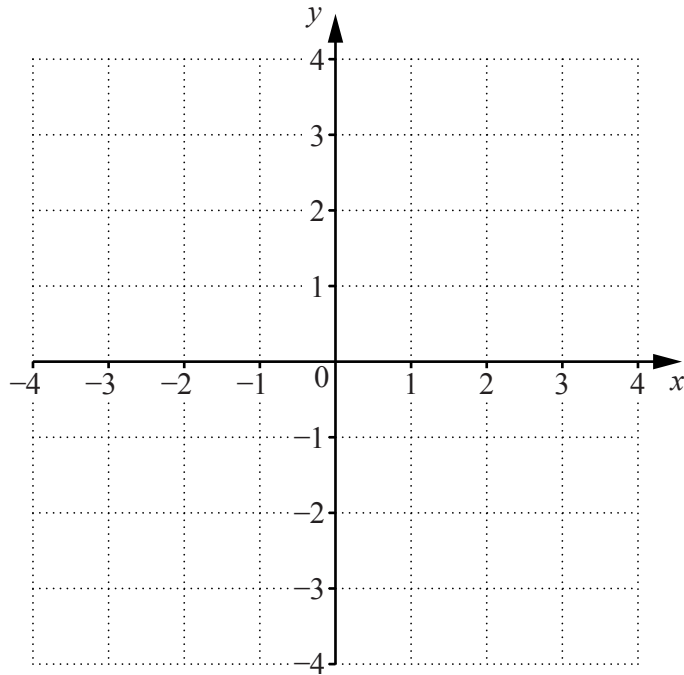


[1]

**11 (a)** A trapezium is shown below.

NOT TO SCALE

4 cm

3 cm

6 cm
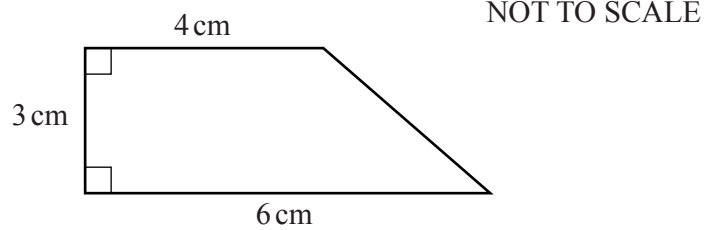
Calculate the area of the trapezium.

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

**(b)** A cuboid has length 3 cm, width 2 cm and height 1 cm.

1 cm

NOT TO SCALE

2 cm

3 cm
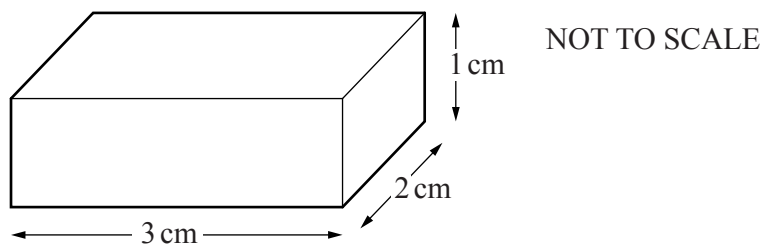
**(i)** Calculate the volume of the cuboid.

*Answer (b)*(i) ................................cm$^3$ [1]

**(ii)** On the grid below, draw the net of the cuboid.

*Answer (b)*(ii)

[2]

**[Turn over**
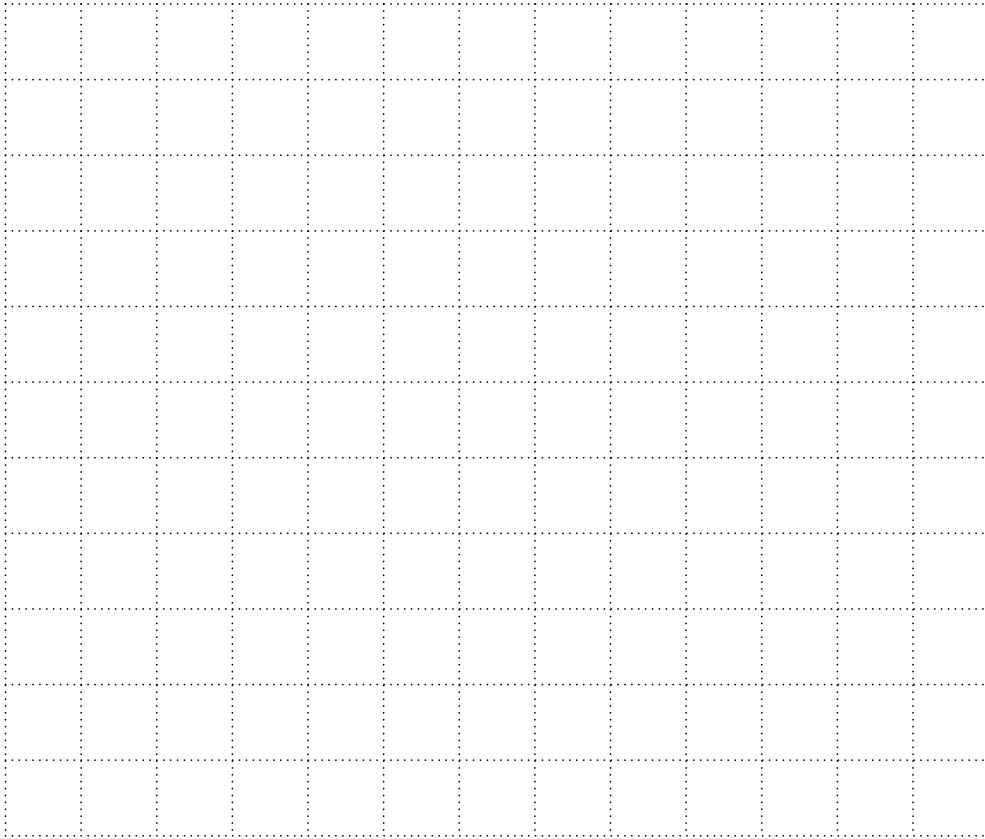
**12** Solve

    **(a)** $x + 3 = 11$,

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

    **(b)** $\dfrac{x}{3} + 2 = 5$,

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

    **(c)** $x^2 - 8x = 0$.

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

**13** **(a)** Given that $w = ab + 1$, find the value of $w$ when $a = 2$ and $b = 3$.

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

**(b)** Make $x$ the subject of the formula $5x + 7y = 1$.

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

**(c)** Simplify

   **(i)** $3a + 6b - 2c + 4a - 5b + 7c$,

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

   **(ii)** $5 - 3(u - 2)$.

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

**14** In the diagram, angle *ACD* = 150° and angle *ABC* = 45°.
*ACE* and *BCD* are straight lines.
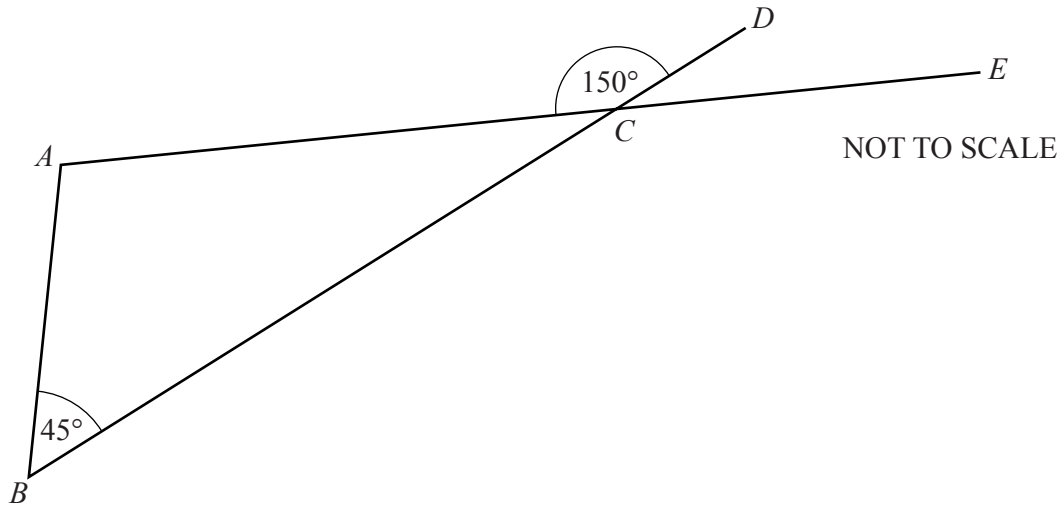


Calculate

**(a)** angle *ACB*,

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

**(b)** angle *CAB*,

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

**(c)** angle *ECD*.

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

**15**  The bearing of *B* from *A* is 110º.
   *B* is 20 km from *A*.
   Using a scale of 1 cm to represent 5 km, draw an accurate scale diagram showing
   the positions of *A* and *B*.

[2]

**16**  The interior angles of a quadrilateral are in the ratio 2 : 4 : 5 : 7.
   Find the size of the largest angle.

*Answer* ............................................... ° [3]

**17** $\overrightarrow{AB}$ is shown on the grid below.
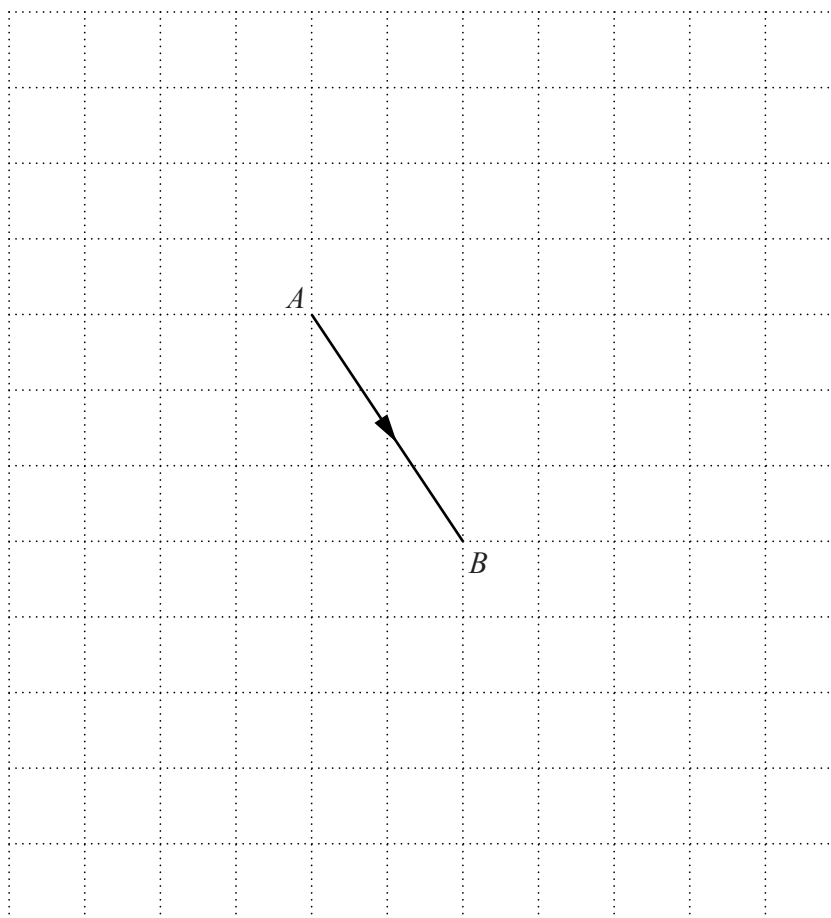


**(a)** Express $\overrightarrow{AB}$ as a column vector.

*Answer (a)* $\begin{pmatrix} \phantom{x} \\ \phantom{x} \end{pmatrix}$ [1]

**(b)** $\overrightarrow{CD} = \begin{pmatrix} -5 \\ -3 \end{pmatrix}$.

Draw $\overrightarrow{CD}$ on the grid above. [1]

**18** Work out these.

**(a)** $6.3 \div 7$

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

**(b)** $18 - 9 \div 3$

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

**(c)** $\dfrac{5}{9} - \dfrac{1}{3}$

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

**(d)** $2\dfrac{1}{2} \div 1\dfrac{1}{4}$

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

**19** A bag contains 2 orange balls ($O_1$ and $O_2$) and 2 green balls ($G_1$ and $G_2$).
A second bag contains 3 red balls ($R_1$, $R_2$ and $R_3$) and 1 blue ball ($B_1$).
Mazwi randomly selects a ball from each bag.
The possibility space diagram shows the possible combinations he may get.
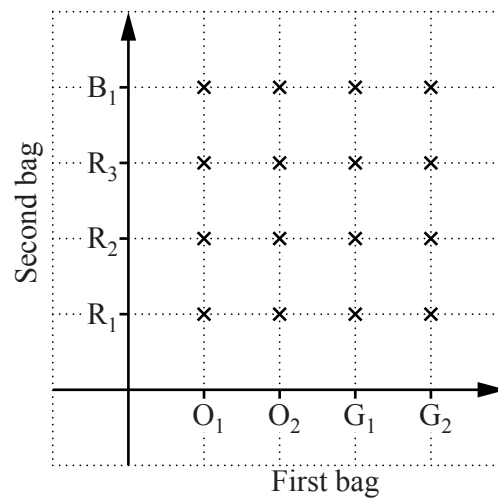


Find the probability that he selects
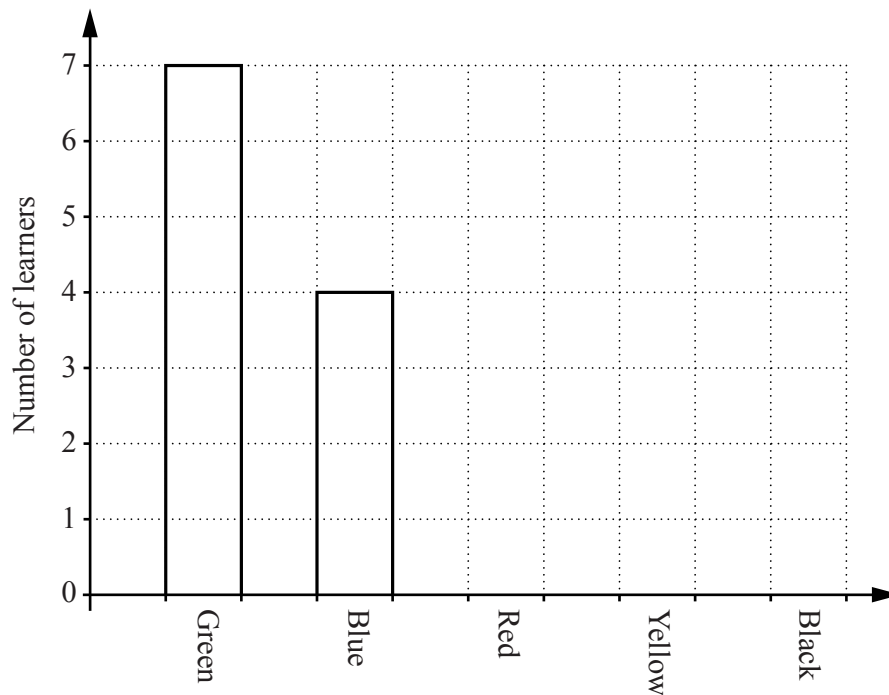
**(a)** an orange ball and a red ball,

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

**(b)** a blue ball and a green ball.

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

**20** A class of 25 learners was asked to state their favourite colours.
The results are shown in the table below.

| Colour | Number of learners |
|--------|--------------------|
| Green  | 7                  |
| Blue   | 4                  |
| Red    | 3                  |
| Yellow | 5                  |
| Black  | 6                  |

A bar chart is drawn to represent the information in the table above.



Complete the bar chart. [2]

**18**

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**20**

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