GCSE Mathematics Practice Tests: Set 8

Paper 1F (Non-calculator)
Time: 1 hour 30 minutes

You should have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- **Calculators must not be used.**
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write $\dfrac{7}{100}$ as a decimal.

....

(**Total for Question 1 is 1 mark**)

2 Write $\dfrac{48}{60}$ as a fraction in its simplest form.

....

(**Total for Question 2 is 1 mark**)

3 There are 840 tickets available for a concert.

$\dfrac{1}{7}$ of these tickets have **not** been sold.

How many of the tickets have been sold?

....

(**Total for Question 3 is 2 marks**)

4 Simplify $6x + 8x - 3x$

....

(Total for Question 4 is 1 mark)

5 Simplify $4e \times 5f$

....

(Total for Question 5 is 1 mark)

6 Solve $8p = 24$

$p = $ ....

(Total for Question 1 is 1 mark)

7 Daniel has five bags of coloured sweets.
He picks at random a sweet from each bag.
The table shows the probability that the sweet he picks from each bag is red.

Bag	A	B	C	D	E
Probability of red	0.7	0.9	0.5	1	0.2

(*a*) From which bag is Daniel least likely to pick a red sweet?

....
(1)

(*b*) Which bag contains only red sweets?

....
(1)

(*c*) From which bag is Daniel equally likely to pick a red sweet as a sweet of another colour?

....
(1)

(Total for Question 7 is 3 marks)

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8 (*a*) Change 650 centimetres into metres.

.... metres
(1)

(*b*) Change 8 litres into millilitres.

.... millilitres
(1)

(Total for Question 8 is 2 marks)

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9   The two-way table shows some information about where 50 people went for their last holiday.

	UK	Africa	USA	Total
Male			2	23
Female	16	9		
Total		16		50

(*a*) Complete the table.

(**3**)

(*b*) What percentage of these 50 people were female **and** went on holiday in Africa?

.... %

(**2**)

(**Total for Question 9 is 5 marks**)

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10   (*a*) Solve $k - 4 = 13$

k = ...

(**1**)

(*b*) Simplify $10t + 4d - 3t + 2d$

....

(**2**)

(**Total for Question 10 is 3 marks**)

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11 The bar chart gives information about the total number of medals won by each of six countries at the 2016 Olympic Games.
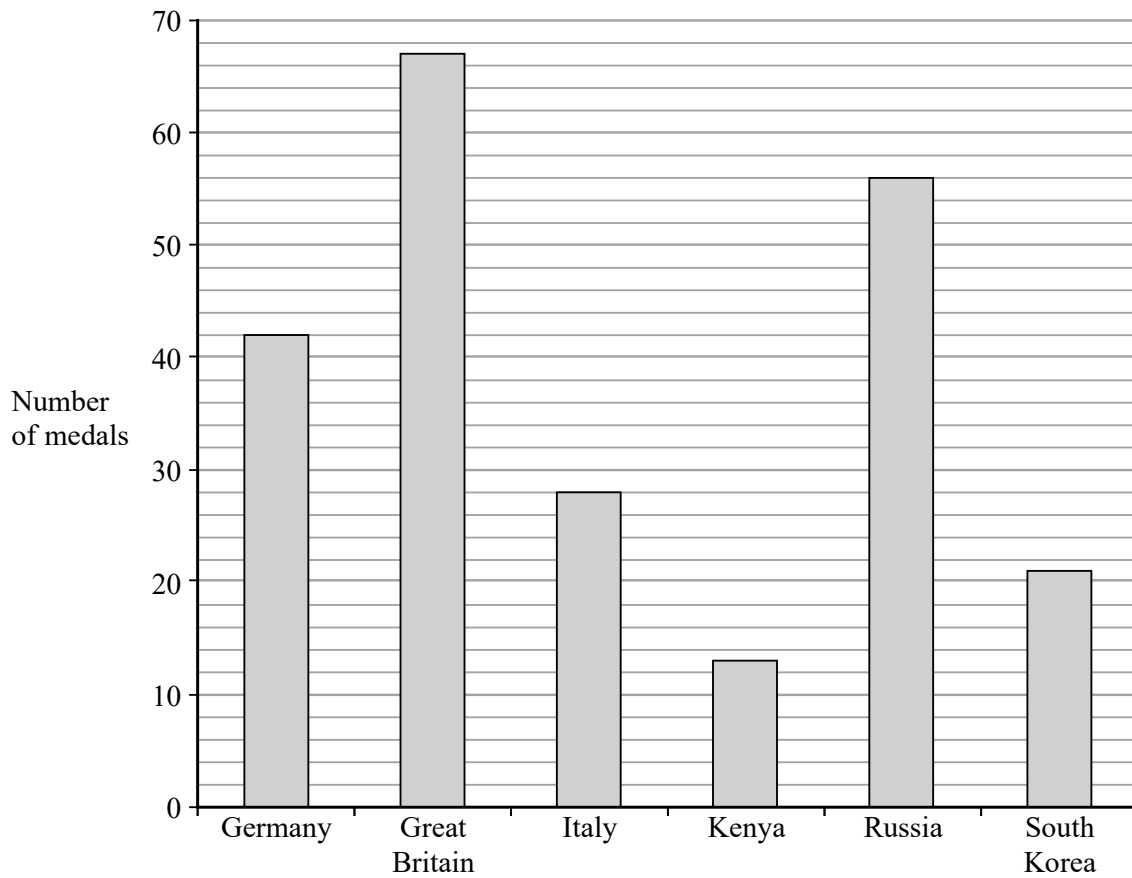
(*a*) Which of these countries won the fewest total number of medals?

....
(1)

Great Britain won 27 gold medals.

(*b*) How many of the medals won by Great Britain were **not** gold medals?

....
(2)

(*c*) Write down the ratio of the total number of medals won by Russia to the total number of medals won by Germany.
Give your ratio in its simplest form.

....

(2)

The USA won

46 gold medals
37 silver medals
38 bronze medals

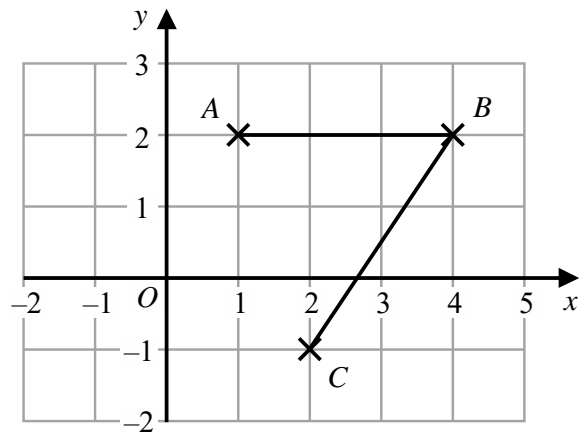(*d*) What fraction of the total number of medals won by the USA were gold medals?

....

(2)

(Total for Question 11 is 7 marks)

_____

12 Memona has a 5 kg sack of rice and some empty bags.
She fills each bag with 475 grams of rice from the sack.

How many bags can Memona completely fill with rice?

....

(Total for Question 10 is 3 marks)

_____

13 The diagram shows points *A*, *B* and *C* on a square grid.

(*a*) Write down the coordinates of *C*.

(.............................. , ...)

(1)

(*b*) Measure the length of *BC*.
Give your answer in centimetres.

.... cm

(1)

(*c*) On the grid, mark with a cross (X) the point *D* so that *ABCD* is a parallelogram.
Label this point *D*.

(1)

(Total for Question 13 is 3 marks)

14 (*a*) Write down a multiple of 8 that is between 20 and 50.

....
(1)

There is only one prime number that is an even number.

(*b*) Write down this number.

....
(1)

Shreya says that 57 is a prime number.

(*c*) Is Shreya correct?
Give a reason for your answer.

....

....
(1)

(**Total for Question 14 is 3 marks**)

15 (i) Write down the mathematical name of this 3-D shape.

....
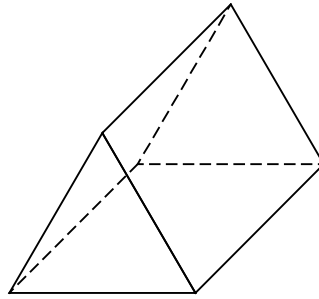
(ii) How many faces does the shape have?

....

(iii) How many vertices does the shape have?

....

(**Total for Question 15 is 3 marks**)

_____

16 (*a*) Find the Lowest Common Multiple (LCM) of 12 and 20.

....

(2)

(*b*) Find the Highest Common Factor (HCF) of 24 and 56.

....

(2)

(Total for Question 16 is 4 marks)

17
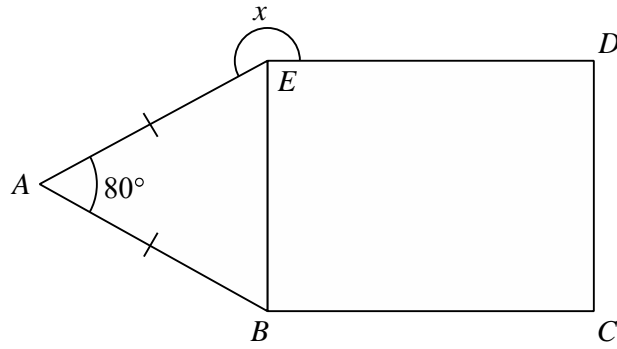
BCDE is a rectangle.
ABE is an isosceles triangle.

AB = *AE*
Angle *BAE* = 80°

Work out the size of angle *x*.

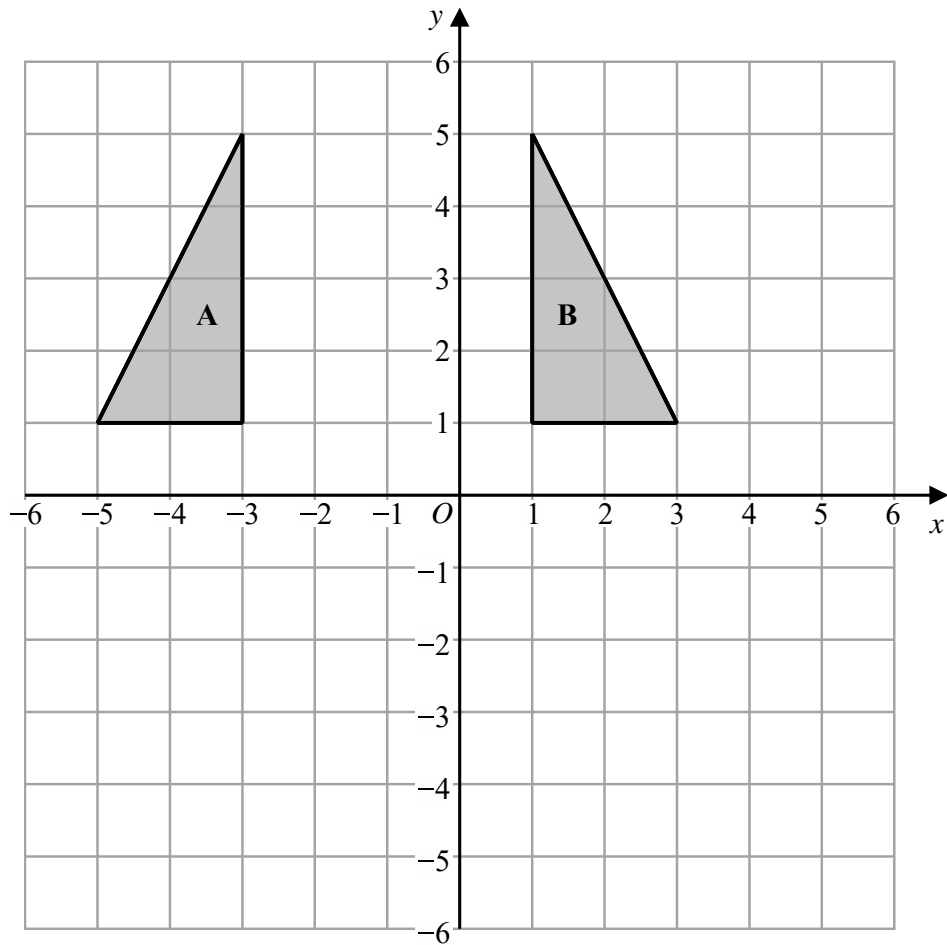... °

(Total for Question 17 is 3 marks)

18 On the grid, draw the graph of $y = 2x + 3$ for values of x from -2 to 3.

(3)
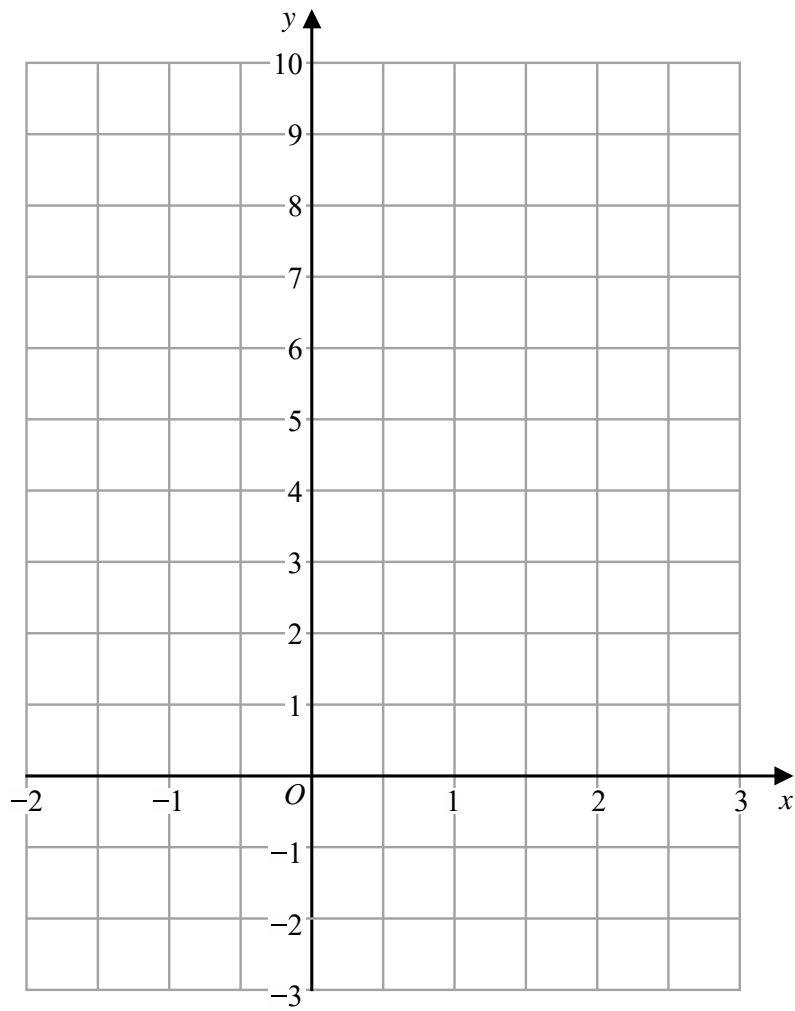
(Total for Question 18 is 3 marks)

19

(a) Describe fully the single transformation that maps triangle **A** onto triangle **B**.

....

....

(2)

(b) On the grid, translate triangle **B** by the vector $\begin{pmatrix} 2 \\ -6 \end{pmatrix}$

Label your triangle **C**.

(1)

(c) Describe fully the single transformation that maps triangle **C** onto triangle **B**.

....

(1)

(Total for Question 19 is 4 marks)

20   (*a*) Write 8×10^4 as an ordinary number.

....
(1)

(*b*) Work out $(3.5 \times 10^5) \div (7 \times 10^8)$
Give your answer in standard form.

....
(2)

(**Total for Question 20 is 3 marks**)

21 (*a*) Simplify $y^5 \times y^9$

....
(1)

(*b*) Simplify $(2m^3)^4$

....
(2)

(*c*) Solve $5(x + 3) = 3x - 4$
Show clear algebraic working.

$x =$ ....
(3)

(Total for Question 21 is 6 marks)

22 Here is a Venn diagram.
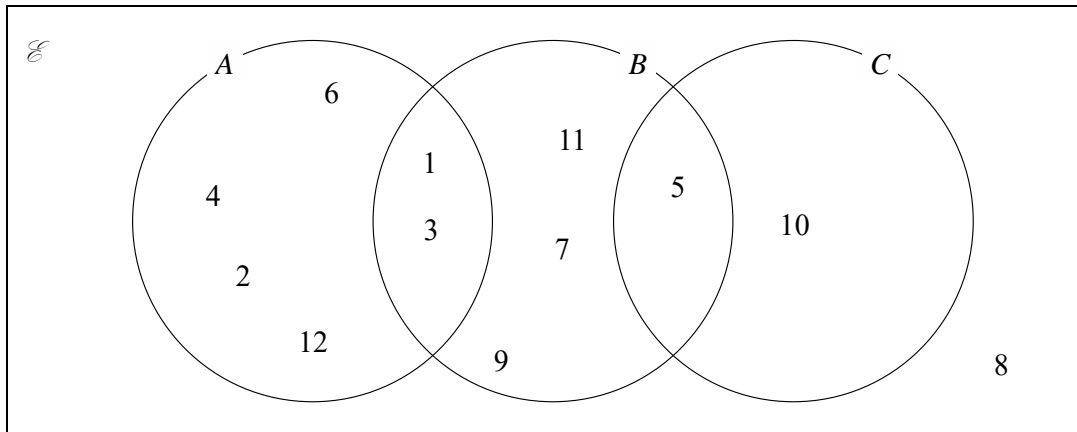
Write down the numbers that are in the set

(i) *A*

....

(ii) $B \cup C$

....

(2)

(**Total for Question 22 is 2 marks**)

23 (*a*) Make *a* the subject of the formula $M = ac - bd$

....
(2)

(*b*) Solve the inequality $5x - 4 < 36$

....
(2)

(*c*) Factorise fully $18e^2 f^3 - 12e^3 f$

....
(2)

(Total for Question 23 is 6 marks)

24 (*a*) Factorise $x^2 + 2x - 24$

....
(2)

(*b*) Hence, solve $x^2 + 2x - 24 = 0$

....
(1)

(Total for Question 24 is 3 marks)

25 The accurate scale drawing shows the positions of two ships, *L* and *M*.

North

L ×

North

M ×
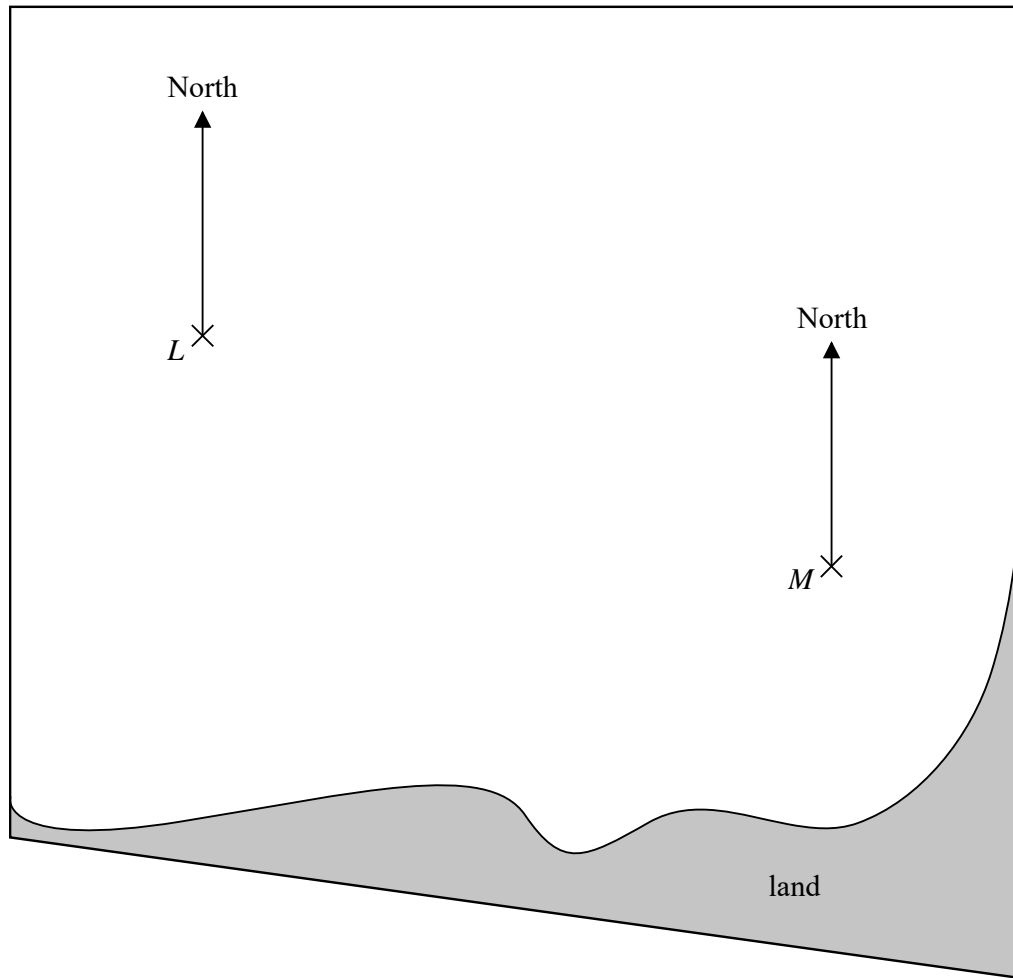
land

(*a*) Find the bearing of ship *M* from ship *L*.

....°

(1)

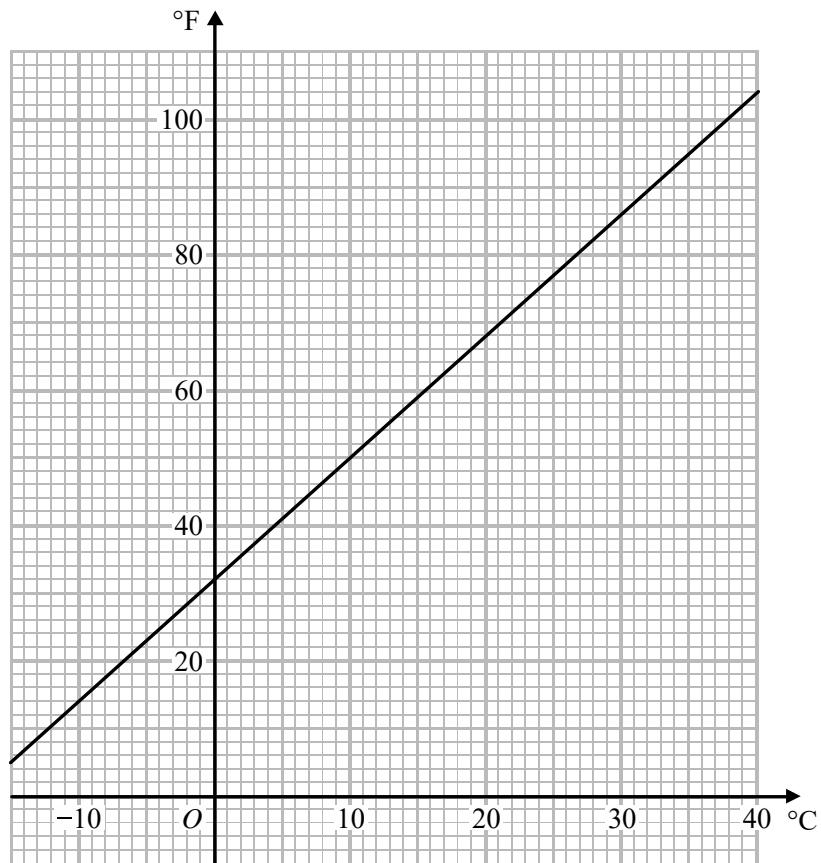The scale of the drawing is 1 cm to 5 km.

Ship *P* is 40 km from *L* and on a bearing of 240° from *M*.

(*b*) On the diagram, mark with a cross (×) the position of ship *P*.

(3)

(Total for Question 25 is 4 marks)

26 You can use this graph to change between temperatures in degrees Celsius (°C) and temperatures in degrees Fahrenheit (°F).

The temperature in Dubai on Monday increased by 20 °C from midnight to midday.

(*a*) What is this temperature increase in degrees Fahrenheit?

.... °F

(2)

Maninder says,

"30 °C is the same as 86 °F, therefore 60 °C will be the same as 172 °F."

(*b*) Is Maninder correct?
Give a reason for your answer.

....

....

(1)

(Total for Question 26 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

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