5499310056

2010 School Certificate Test
Mathematics

Centre Number

Student Number

Section 1

25 marks
Time allowed for this section is 30 minutes

Answer Questions 1–25 in the spaces provided

Each question is worth 1 mark

Calculators are NOT to be used in this section

There will be a short break between Section 1 and Section 2

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

1    $2^3 + 3^2 =$

....

2    $10x - 2x =$

....

3    $2 - \dfrac{1}{3} =$

....

4   The ingredients for a banana cake are shown. The cake serves 10 people.

> 250 g butter
> 1 cup caster sugar
> 3 eggs
> 3 over-ripe bananas
> 2 cups self-raising flour

How many grams of butter are needed to make a banana cake that serves 30 people?

....

5   Evaluate $27^{\frac{1}{3}}$.

....

6    $0.12 - 0.1 =$

....

7   The perimeter of an equilateral triangle is 96 centimetres.

What is the length of one side?

....

8   *ABC* is a right-angled triangle.
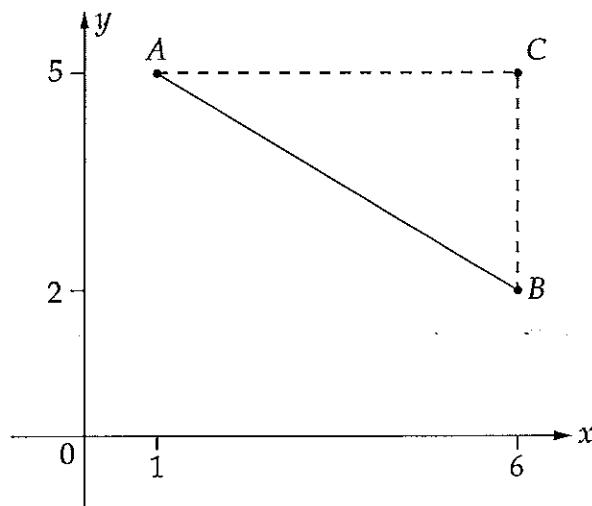
What are the coordinates of point C?

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

9   How many minutes are in $\frac{2}{5}$ of one hour?

....

10   Write down a possible value for each of the symbols $\square$ and $\triangle$.

$k^9 = k^{\square} \times k^{\triangle}$

$\square$ = ...

$\triangle$ = ...

11   20% of an amount is 40.

What is the amount?

....

12   What is the mean of 9, 9, 12, 15 and 20?

....

13 The perimeter of the field below is 89 m.

5 m

18 m

NOT TO
SCALE

26 m
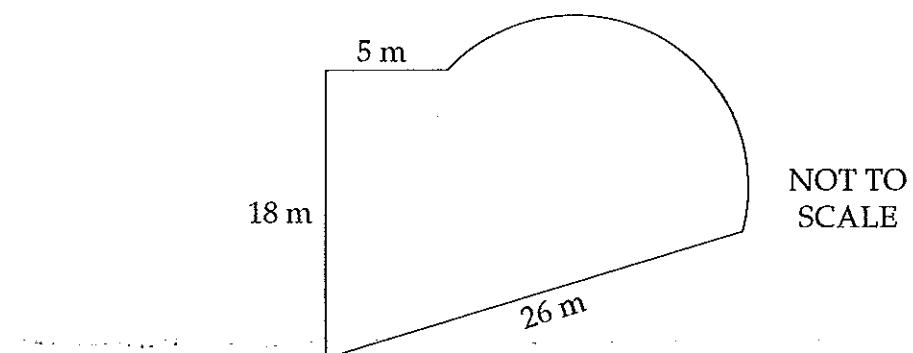
What is the length of the curved part of the perimeter?

....

....

14 The scale on this diagram is 1 : 1 000 000.

Bright Tower
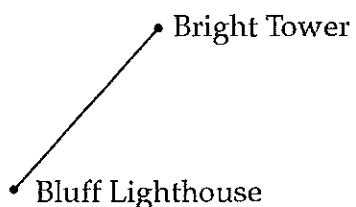
Bluff Lighthouse

How many kilometres is Bluff Lighthouse from Bright Tower?

....

....

Centre Number

Section 1 (continued)

Student Number

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15   $(8 \times 10^5) \div (2 \times 10^3) =$

....

16   The graph shows sales of MP3 players over a period of years.

MP3 Sales
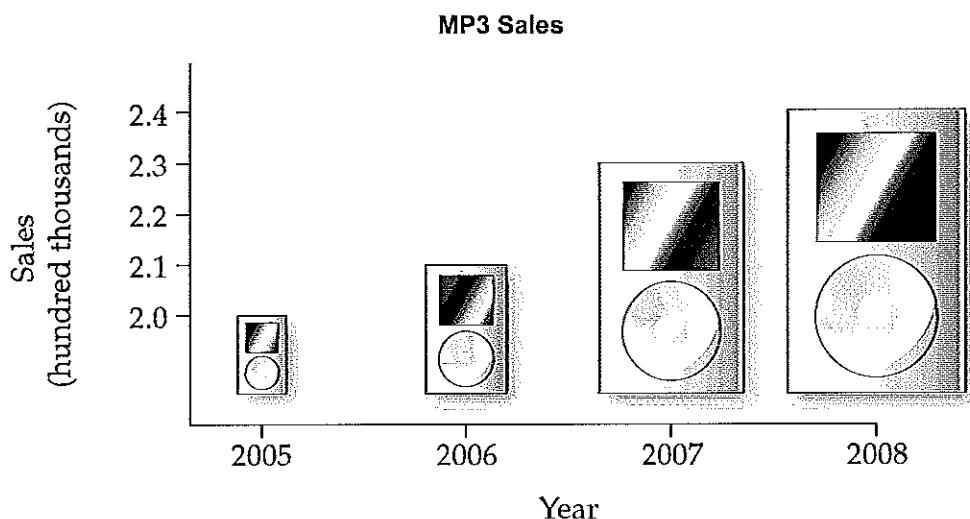
Give ONE reason why this graph could be misleading.

....

....

17   Explain the difference in meaning between $a \times a$ and $2a$.

....

....

....

18 An item decreased in value from $20 to $5.

What is the percentage decrease?

....

19 Find the value of $10 + ak$ when $a = 7$ and $k = -2$.

....

20 Tina and Jill play a game where points are scored as follows:

$$
\begin{array}{ll}
\text{WIN} & = +7 \\
\text{LOSS} & = -3
\end{array}
$$

Tina wins 5 games and loses 3 games, and Jill wins 3 games and loses 5 games.

What is the difference in their final scores?

....

....

21 $ABCD$ is a rhombus. Its area is 48 cm^2, and $AC = 8$ cm.

NOT TO SCALE
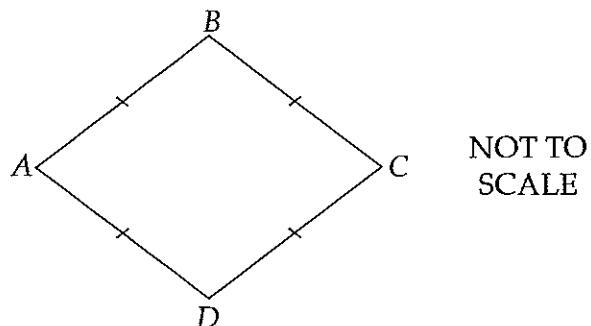
What is the length of BD?

....

22 The circle has *AB* as a diameter and centre C.

NOT TO SCALE
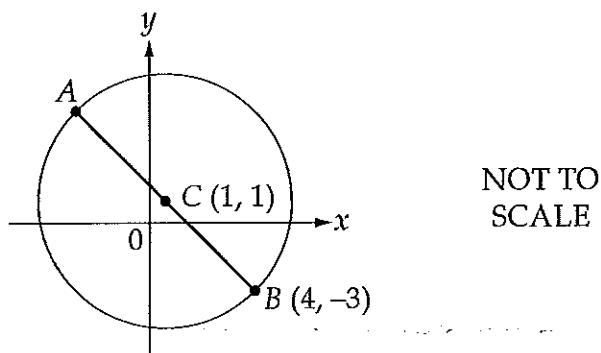
What are the coordinates of *A*?

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

23 In the triangle, $\sin \theta = \frac{4}{5}$.

NOT TO SCALE
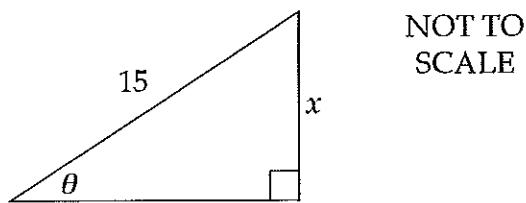
What is the value of *x*?

....

....

24 There are four prime factors of 2010.

What are three of these prime factors?

....

....

....

25 A sketch of triangle ABC is given.

NOT TO SCALE
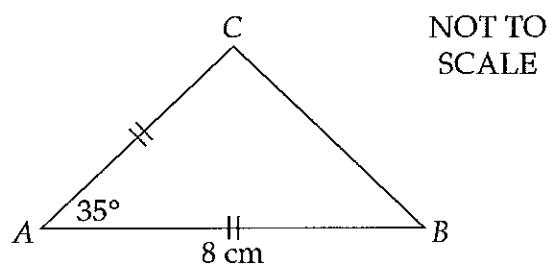
Using geometrical instruments and the line AB below, construct the triangle accurately.

A   8 cm   B

End of Section 1