

## Location Entry Codes

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As part of CIE's continual commitment to maintaining best practice in assessment, CIE uses different variants of some question papers for our most popular assessments with large and widespread candidature. The question papers are closely related and the relationships between them have been thoroughly established using our assessment expertise. All versions of the paper give assessment of equal standard.

The content assessed by the examination papers and the type of questions is unchanged.

This change means that for this component there are now two variant Question Papers, Mark Schemes and Principal Examiner's Reports where previously there was only one. For any individual country, it is intended that only one variant is used. This document contains both variants which will give all Centres access to even more past examination material than is usually the case.

The diagram shows the relationship between the Question Papers, Mark Schemes and Principal Examiners' Reports that are available.

| Question Paper                | Mark Scheme                | Principal Examiner's Report                |
|-------------------------------|----------------------------|--------------------------------------------|
| Introduction                  | Introduction               | Introduction                               |
| First variant Question Paper  | First variant Mark Scheme  | First variant Principal Examiner's Report  |
| Second variant Question Paper | Second variant Mark Scheme | Second variant Principal Examiner's Report |

### Who can I contact for further information on these changes?

Please direct any questions about this to CIE's Customer Services team at:

[international@cie.org.uk](mailto:international@cie.org.uk)

The titles for the variant items should correspond with the table above, so that at the top of the first page of the relevant part of the document and on the header, it has the words:

- First variant Question Paper / Mark Scheme / Principal Examiner's Report

or

- Second variant Question Paper / Mark Scheme / Principal Examiner's Report

as appropriate.



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

CANDIDATE  
NAME

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CENTRE  
NUMBER

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**MATHEMATICS**

**0580/11, 0581/11**

Paper 1 (Core)

**October/November 2008**

**1 hour**

Candidates answer on the Question Paper.

Additional Materials:

Electronic Calculator  
Geometrical Instruments

Mathematical tables (optional)  
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.

You may use a soft pencil for any diagrams or graphs.

Do not use staples, paper clips, highlighters, glue or correction fluid.

**DO NOT WRITE IN ANY BARCODES.**

Answer **all** questions.

If working is needed for any question it must be shown below that question.

Electronic calculators should be used.

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  $\pi$ , use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together.

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 56.

**For Examiner's Use**

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This document consists of **9** printed pages and **3** blank pages.

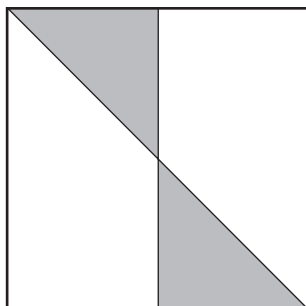


- 1 Write down a multiple of 4 and 14 which is less than 30.

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Use

Answer ..... [1]

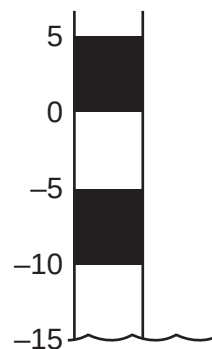
2



Write down the order of rotational symmetry of the diagram above.

Answer ..... [1]

- 3 On 1st August the level of water in a lake was  $-15$  metres.  
A month later the level was 2 metres higher.  
Write down the new level of water.



Answer ..... m [1]

- 4 The area of a square is  $42.25 \text{ cm}^2$ .  
Work out the length of one side of the square.

Answer ..... cm [1]

- 5 Expand the brackets and simplify  $5x - 6(3x - 2)$ .

Answer ..... [2]

- 6 The scale on a map is 1:250 000.  
A road is 4.6 centimetres long on the map.  
Calculate the actual length of the road in kilometres.

Answer ..... km [2]

- 7 > = <

Choose one of the symbols above to complete each of the following statements.

(a)  $74\% \dots\dots\dots \frac{5}{7}$  [1]

(b)  $\left(\frac{1}{2}\right)^{-3} \dots\dots\dots 8$  [1]

- 8 Juanita changed \$20 into euros when the exchange rate was €1=\$1.2685.  
How many euros did she receive?  
Give your answer correct to 2 decimal places.

Answer € ..... [2]

- 9 Solve the equation  $5x + 2 = 53$ .

Answer  $x =$  ..... [2]

- 10 The length of the River Nile is 6700 kilometres, correct to the nearest hundred kilometres.  
Complete the statement about the length,  $L$  kilometres, of the River Nile.

Answer .....  $\leq L <$  ..... [2]

11

|             |       |       |       |       |
|-------------|-------|-------|-------|-------|
| City centre | 11 15 | 12 30 | 13 10 | 13 40 |
| Heatherton  | 11 25 | 12 40 | 13 20 | 13 50 |
| Rykneld     | 11 29 | 12 44 | 13 24 | 13 54 |

The table above is part of a bus timetable.

- (a) The 11 15 bus left the City centre on time and arrived at Rykneld 2 minutes early.  
How many minutes did it take to reach Rykneld?

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

- (b) Paulo walked to the bus stop at Heatherton and arrived at 12 56.  
The next bus arrived on time.  
How many minutes did Paulo wait for the bus?

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

- 12 The line with equation  $y = 2x - k$  passes through the point  $(4, 0)$ .  
Work out the value of  $k$ .

Answer  $k =$  ..... [2]

- 13 Write 0.00578

- (a) in standard form,

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

- (b) correct to 2 significant figures,

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

- (c) correct to 2 decimal places.

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

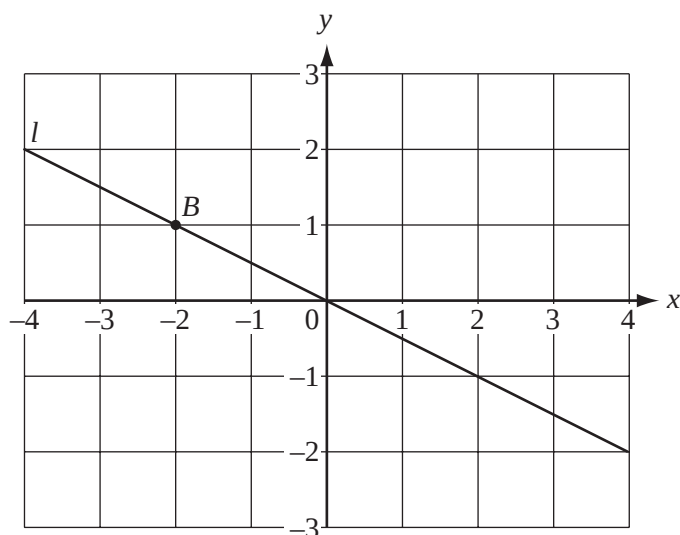
- 14** Without using your calculator, work out  $\frac{5}{8} \div 3\frac{3}{4}$ .  
 Give your answer as a fraction in its lowest terms.  
 You must show **all** your working.

*Answer*

*For  
Examiner's  
Use*

[3]

**15**



- (a) Mark clearly on the diagram the point with co-ordinates (3, 2) and label it *A*. [1]
- (b) Write down the co-ordinates of the point *B*.

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

- (c) Find the gradient of the line *l*.

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

## 16 Simplify

(a)  $\left(\frac{1}{p}\right)^0$ ,

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

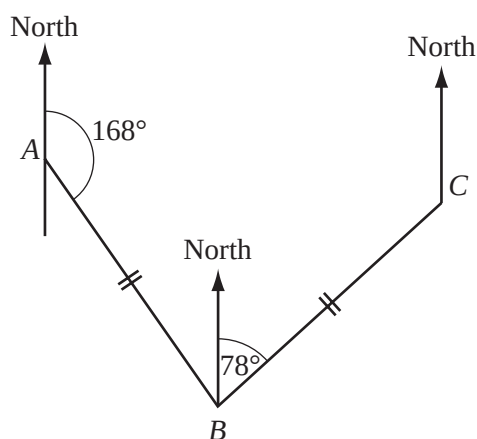
(b)  $q^4 \times q^7$ ,

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

(c)  $(r^2)^{-3}$ .

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

## 17

NOT TO  
SCALE

The diagram shows the route of a fishing boat.

The boat sails from  $A$  to  $B$  on a bearing  $168^\circ$  and then from  $B$  to  $C$  on a bearing  $078^\circ$ .

$AB = BC$ .

(a) Show that angle  $ABC = 90^\circ$ .

Answer(a)

[1]

(b) Work out the bearing of  $C$  from  $A$ .

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

- 18 (a) Calculate the volume of a cylinder of radius 50 cm and height 138 cm.

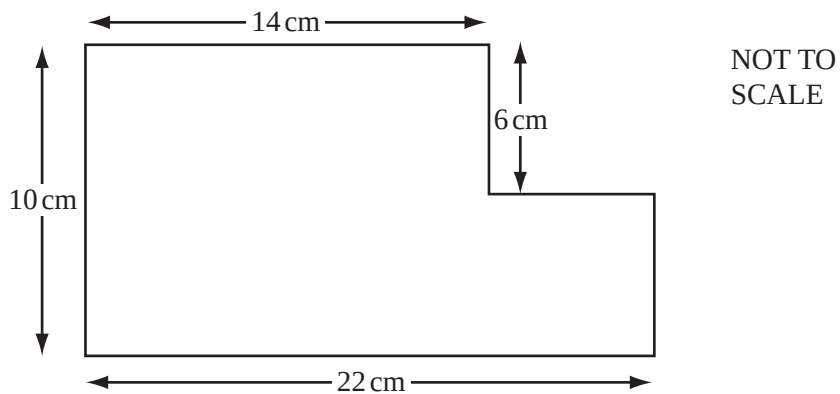
Answer(a) .....  $\text{cm}^3$  [2]

- (b) Write your answer to **part (a)** in cubic metres.

Answer(b) .....  $\text{m}^3$  [1]

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19



For the shape above, work out

- (a) the perimeter,

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

- (b) the area.

Answer(b) .....  $\text{cm}^2$  [2]

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- 20 (a) 85% of the seeds in a packet will produce red flowers.  
One seed is chosen at random.  
What is the probability that it will **not** produce a red flower?

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

- (b) A box of 15 pencils contains 5 red, 4 yellow and 6 blue pencils.  
One pencil is chosen at random from the box.  
Find the probability that it is

(i) yellow,

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

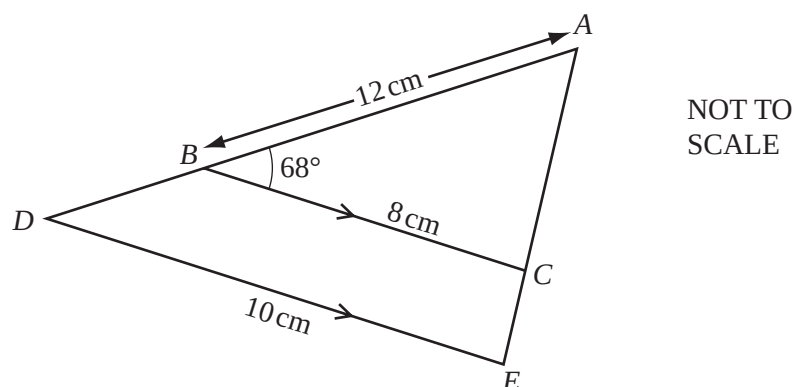
(ii) yellow or blue,

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

(iii) green.

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

21



In the diagram  $BC$  is parallel to  $DE$ .

- (a) Complete the following statement.

Triangle  $ABC$  is ..... to triangle  $ADE$ . [1]

- (b)  $AB = 12$  cm,  $BC = 8$  cm and  $DE = 10$  cm.  
Calculate the length of  $AD$ .

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

- (c) Angle  $ABC = 68^\circ$ .  
Calculate the size of the reflex angle at  $D$ .

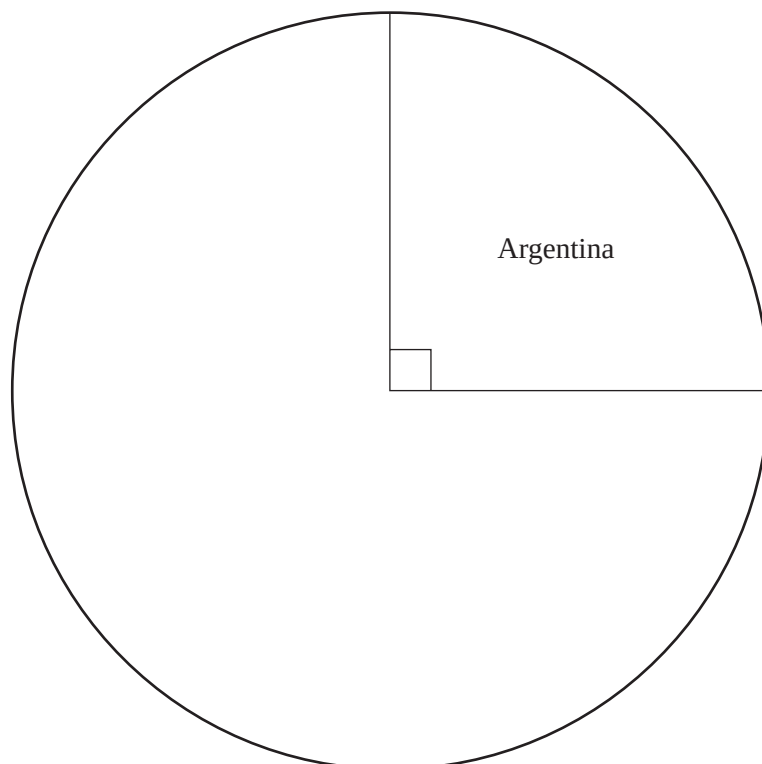
Answer(c) ..... [2]

- 22** A travel brochure contains 24 pictures from different countries.  
The table shows how many pictures there are from each country.

*For  
Examiner's  
Use*

| Country      | Number of pictures | Angle in a pie chart |
|--------------|--------------------|----------------------|
| Argentina    | 6                  | $90^\circ$           |
| South Africa | 10                 | $150^\circ$          |
| Australia    | 3                  |                      |
| New Zealand  |                    |                      |

- (a) Complete the table. [3]
- (b) Complete the pie chart accurately and label the sectors for South Africa, Australia and New Zealand.



[2]

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**0580/12, 0581/12**

October/November 2008

**1 hour**

Additional Materials: Electronic Calculator  
Geometrical Instruments

Mathematical tables (optional)  
Tracing paper (optional)

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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 56.

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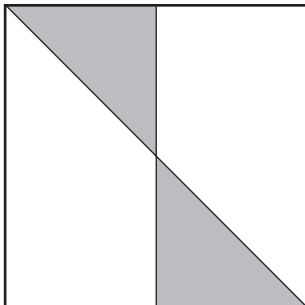
This document consists of **9** printed pages and **3** blank pages.

- 1 Write down a multiple of 9 and 12 which is less than 40.

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Examiner's  
Use

Answer ..... [1]

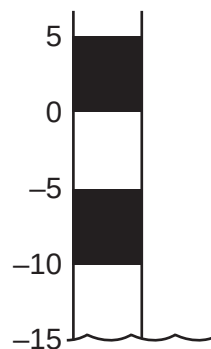
2



Write down the order of rotational symmetry of the diagram above.

Answer ..... [1]

- 3 On 1st August the level of water in a lake was  $-15$  metres.  
A month later the level was 2 metres higher.  
Write down the new level of water.



Answer ..... m [1]

- 4 The area of a square is  $54.76 \text{ cm}^2$ .  
Work out the length of one side of the square.

Answer ..... cm [1]

- 5 Expand the brackets and simplify  $3x - 5(4x - 2)$ .

Answer ..... [2]

- 6 The scale on a map is 1:250 000.  
A road is 3.8 centimetres long on the map.  
Calculate the actual length of the road in kilometres.

Answer ..... km [2]

- 7 > = <

Choose one of the symbols above to complete each of the following statements.

(a)  $74\% \dots\dots\dots \frac{5}{7}$  [1]

(b)  $\left(\frac{1}{2}\right)^{-3} \dots\dots\dots 8$  [1]

- 8 Juanita changed \$30 into euros when the exchange rate was €1=\$1.2685.  
How many euros did she receive?  
Give your answer correct to 2 decimal places.

Answer € ..... [2]

- 9 Solve the equation  $5x + 1 = 54$ .

Answer  $x =$  ..... [2]

- 10 The length of the River Nile is 6700 kilometres, correct to the nearest hundred kilometres.  
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Answer .....  $\leq L <$  ..... [2]



11

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Work out the value of  $k$ .

Answer  $k =$  ..... [2]

- 13 Write 0.00656

- (a) in standard form,

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

- (b) correct to 2 significant figures,

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

- (c) correct to 2 decimal places.

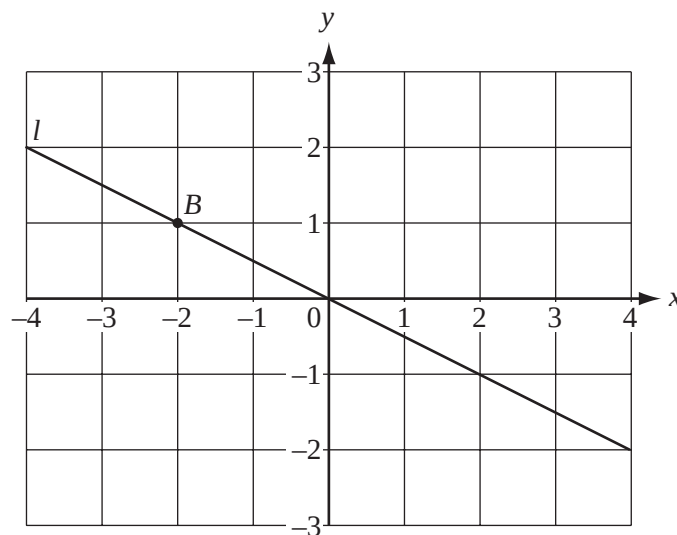
Answer(c) ..... [1]

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 Give your answer as a fraction in its lowest terms.  
 You must show **all** your working.

*Answer*

[3]

**15**



- (a) Mark clearly on the diagram the point with co-ordinates (3, 2) and label it *A*. [1]
- (b) Write down the co-ordinates of the point *B*.

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

- (c) Find the gradient of the line *l*.

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

## 16 Simplify

(a)  $\left(\frac{1}{p}\right)^0$ ,

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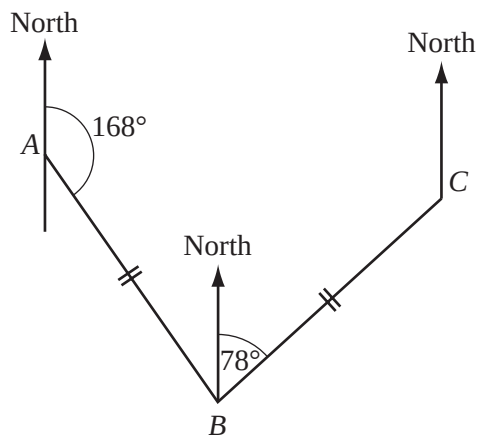
(b)  $q^3 \times q^5$ ,

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

(c)  $(r^4)^{-2}$ .

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

## 17

NOT TO  
SCALE

The diagram shows the route of a fishing boat.

The boat sails from  $A$  to  $B$  on a bearing  $168^\circ$  and then from  $B$  to  $C$  on a bearing  $078^\circ$ .

$AB = BC$ .

- (a) Show that angle
- $ABC = 90^\circ$
- .

Answer(a)

[1]

- (b) Work out the bearing of
- $C$
- from
- $A$
- .

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

- 18 (a) Calculate the volume of a cylinder of radius 60 cm and height 129 cm.

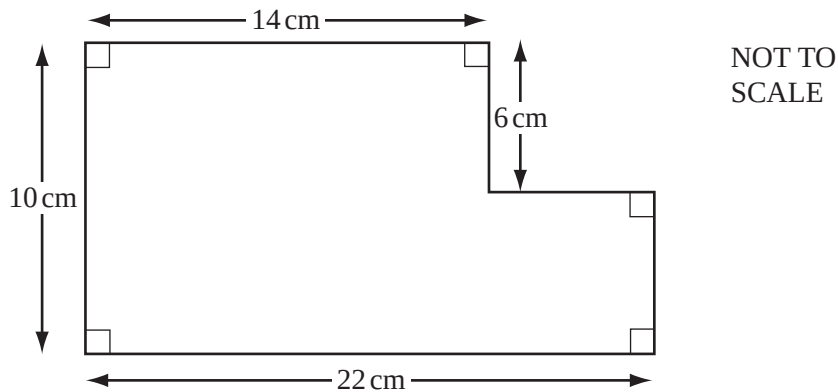
Answer(a) .....  $\text{cm}^3$  [2]

- (b) Write your answer to **part (a)** in cubic metres.

Answer(b) .....  $\text{m}^3$  [1]

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19



For the shape above, work out

- (a) the perimeter,

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

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Answer(b) .....  $\text{cm}^2$  [2]

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One seed is chosen at random.  
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Answer(b)(i) ..... [1]

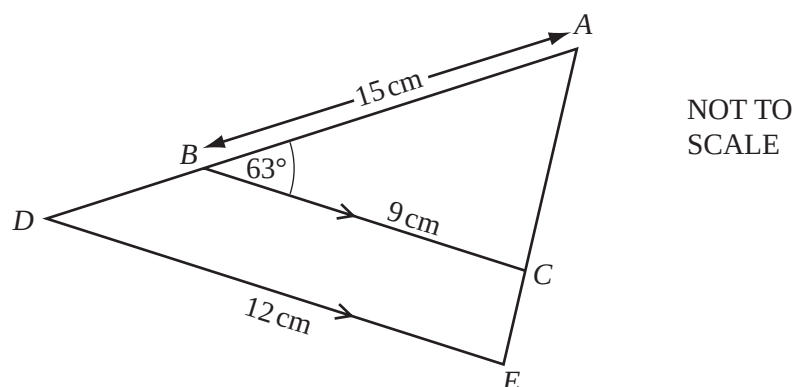
(ii) yellow or blue,

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

(iii) green.

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

21



In the diagram  $BC$  is parallel to  $DE$ .

- (a) Complete the following statement.

Triangle  $ABC$  is ..... to triangle  $ADE$ . [1]

- (b)  $AB = 15$  cm,  $BC = 9$  cm and  $DE = 12$  cm.  
Calculate the length of  $AD$ .

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

- (c) Angle  $ABC = 63^\circ$ .  
Calculate the size of the reflex angle at  $D$ .

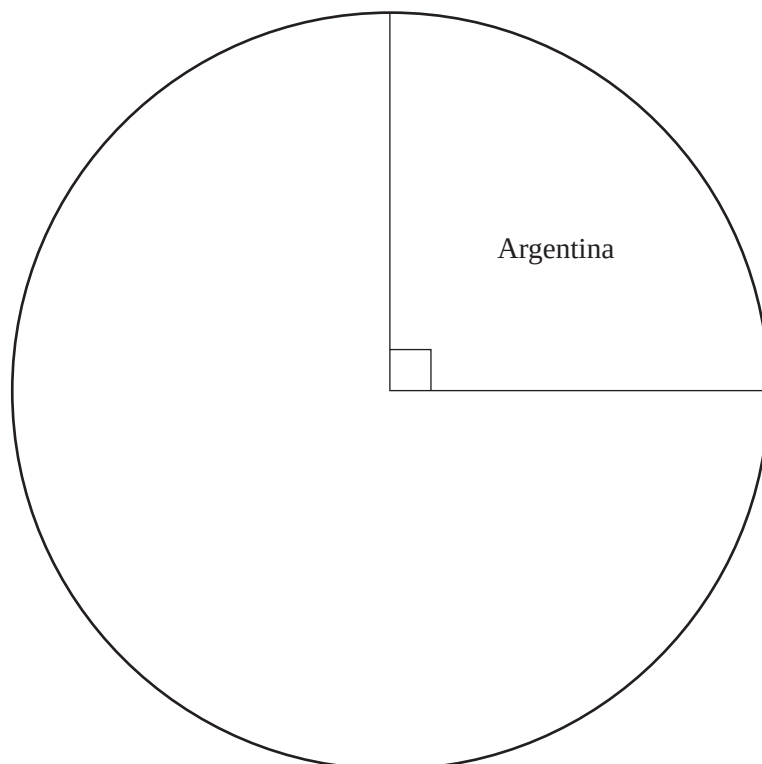
Answer(c) ..... [2]

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*For  
Examiner's  
Use*

| Country      | Number of pictures | Angle in a pie chart |
|--------------|--------------------|----------------------|
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| Australia    | 3                  |                      |
| New Zealand  |                    |                      |

- (a)** Complete the table. [3]
- (b)** Complete the pie chart accurately and label the sectors for South Africa, Australia and New Zealand.



[2]

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