

Please check the examination details below before entering your candidate information

|                                                                                                                                                                |  |                                                                                                                           |                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Candidate surname                                                                                                                                              |  | Other names                                                                                                               |                                                                                                         |
| <b>Pearson Edexcel</b><br><b>International GCSE</b>                                                                                                            |  | Centre Number<br><input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Candidate Number<br><input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| <b>Monday 7 January 2019</b>                                                                                                                                   |  |                                                                                                                           |                                                                                                         |
| Morning (Time: 2 hours)                                                                                                                                        |  | Paper Reference <b>4MA1/1F</b>                                                                                            |                                                                                                         |
| <b>Mathematics A</b><br><b>Level 1/2</b><br><b>Paper 1F</b><br><b>Foundation Tier</b>                                                                          |  |                                        |                                                                                                         |
| <b>You must have:</b><br>Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used. |  |                                                                                                                           | Total Marks<br><input type="text"/>                                                                     |

### 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.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided  
– *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.  
Anything you write on the formulae page will gain NO credit.

### Information

- The total mark for this paper is 100.
- 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.
- Check your answers if you have time at the end.

Turn over ►

P59016A

©2019 Pearson Education Ltd.

1/1/1/

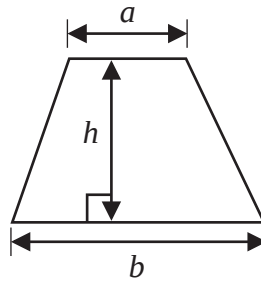


P 5 9 0 1 6 A 0 1 2 4

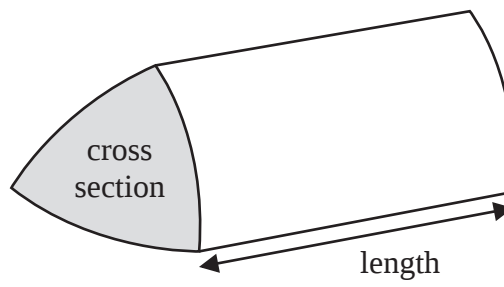
  
**Pearson**

**International GCSE Mathematics**  
**Formulae sheet – Foundation Tier**

**Area of trapezium**  $= \frac{1}{2}(a + b)h$

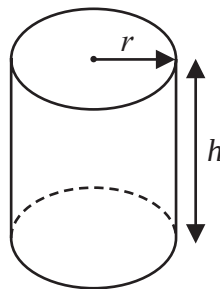


**Volume of prism** = area of cross section  $\times$  length



**Volume of cylinder**  $= \pi r^2 h$

**Curved surface area of cylinder**  $= 2\pi rh$



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



**Answer ALL TWENTY questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

- 1 (a) Write these numbers in order of size.  
Start with the smallest number.

73      138      36      219      89

(1)

- (b) Write in figures the number two thousand and eighteen.

(1)

- (c) Write in words the number 4309

(1)

- (d) Write down the value of the 7 in 9715

(1)

- (e) Write the number 286 correct to the nearest 10

(1)

- (f) Work out  $\frac{4}{5}$  of 185

(2)

**(Total for Question 1 is 7 marks)**



P 5 9 0 1 6 A 0 3 2 4

2 The pictogram shows some information about the number of books read by Theodore during each of five weeks.

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Week 1 |                                                                                                                                                                            |
| Week 2 |                                                                                                                                                                                                                                                             |
| Week 3 |       |
| Week 4 |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Week 5 |                                                                                     |

(a) During which week did Theodore read the greatest number of books?

Week (1)

Theodore read 16 books during Week 1

(b) (i) How many books does  represent?

(ii) How many books did Theodore read during Week 2?

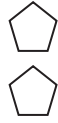
(iii) How many books did Theodore read during Week 5?

(3)

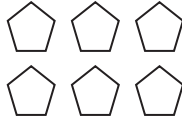
(Total for Question 2 is 4 marks)



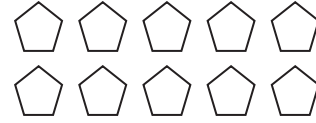
3 Here is a sequence of patterns made from identical pentagons.



Pattern  
number 1



Pattern  
number 2



Pattern  
number 3

(a) (i) Work out the number of pentagons in Pattern number 4

(ii) Explain how you worked out your answer.

(2)

A different sequence of patterns is made from identical hexagons.  
The rule below can be used to find the number of hexagons in each pattern of this sequence.

Multiply the Pattern number by 5 and subtract 1

(b) Work out the number of hexagons in Pattern number 7

(1)

A pattern in this sequence has exactly 59 hexagons.

(c) Work out its Pattern number.

(2)

(Total for Question 3 is 5 marks)



P 5 9 0 1 6 A 0 5 2 4

- 4 Megan buys 2 muffins and 1 carrot cake.  
The total cost is £4.74

The cost of the carrot cake is £1.80

- (a) Find the cost of each muffin.

£

(3)

Caitlin buys some apples and some oranges.  
She buys twice as many apples as oranges.

Each apple costs £0.25

Each orange costs £0.30

Caitlin has £5 to spend.

- (b) Find the greatest number of apples she can buy.

(3)

(Total for Question 4 is 6 marks)



- 5 The table shows information about the number of gold medals won by each of 8 countries at the 2016 Olympics.

| Country                            | Number of gold medals |
|------------------------------------|-----------------------|
| China                              | 26                    |
| France                             | 10                    |
| Germany                            | 17                    |
| Great Britain and Northern Ireland | 27                    |
| Japan                              | 12                    |
| Russia                             | 19                    |
| South Korea                        | 9                     |
| United States                      | 46                    |

- (a) Work out the range of the number of gold medals.

(1)

- (b) Work out the median number of gold medals.

(2)

- (c) Work out the mean number of gold medals.

(2)

(Total for Question 5 is 5 marks)



P 5 9 0 1 6 A 0 7 2 4

6 Sabbir arrived at Dhaka train station at 9 30 pm.

(a) Write this time using the 24-hour clock.

(1)

A train left Dhaka train station at 10 30 pm one day.  
The train arrived at Chittagong train station at 7 50 am the next day.

(b) Work out the time taken by this train.  
Give your answer in hours and minutes.

hours minutes  
(2)

A different train travelled from Dhaka to Darshana.  
The train took 5 hours and 30 minutes.  
The train travelled a distance of 327 kilometres.

(c) Work out the average speed of the train.  
Give your answer in kilometres per hour correct to the nearest whole number.

km/h  
(3)

(Total for Question 6 is 6 marks)



- 7 (a) Write down the prime number between 90 and 100

(1)

- (b) Find the value of  $3^6$

(1)

- (c) Find the cube root of 6859

(1)

- (d) (i) Work out the value of  $\frac{\sqrt{8.4 + 9.1^2}}{4.1 \times 0.6}$

Write down all the figures on your calculator display.

(2)

- (ii) Write your answer to part (d) (i) correct to 1 decimal place.

(1)

**(Total for Question 7 is 6 marks)**



P 5 9 0 1 6 A 0 9 2 4

8 (a) Simplify  $2e - 3f + 4e - 7f$

(2)

(b) Expand and simplify  $5(4x + 3) - (3x - 1)$

(2)

(c) Factorise fully  $4p + 6pq$

(2)

(Total for Question 8 is 6 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



9  $h = 6q - 2u$

(a) Work out the value of  $h$  when  $q = 3$  and  $u = -5$

$$h = \quad (2)$$

$$B = 3m + 2p$$

(b) Work out the value of  $p$  when  $B = 2$  and  $m = 5$

$$p = \quad (2)$$

(Total for Question 9 is 4 marks)



P 5 9 0 1 6 A 0 1 1 2 4

- 10** All the teachers at a school are either left footed or right footed.  
At the school

the number of left footed teachers : the number of right footed teachers = 3 : 13

A teacher at the school is picked at random.

- (a) Find the probability that this teacher is left footed.

(1)

At the school, there are 18 left footed teachers.

- (b) How many right footed teachers are there?

(2)

(Total for Question 10 is 3 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



11 Benson was on holiday in Kenya for 70 days.

He was in Nairobi for  $\frac{2}{7}$  of this holiday.

He was in Mombasa for  $\frac{1}{5}$  of this holiday.

He was in Kisumu for  $\frac{4}{9}$  of the **rest** of this holiday.

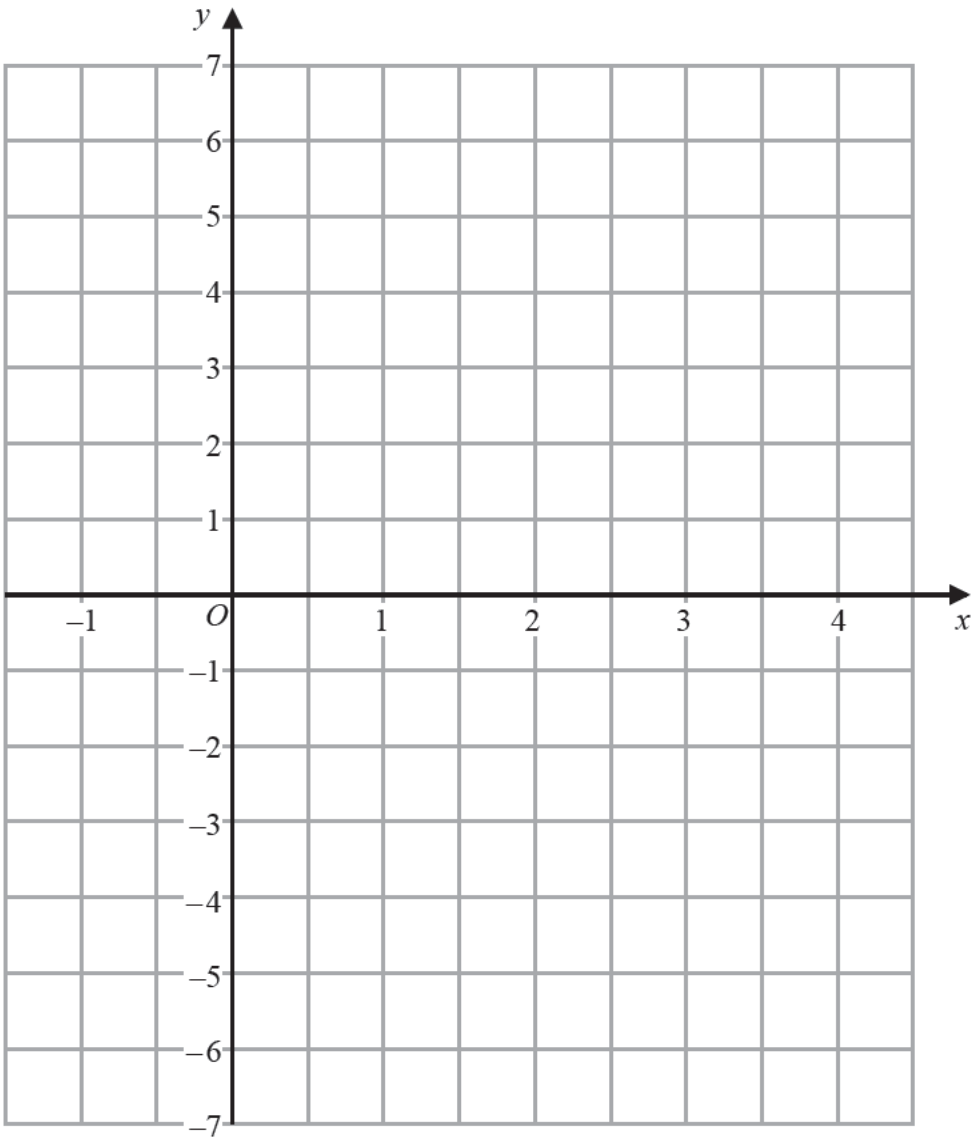
For what fraction of this holiday was Benson in Kisumu?

(Total for Question 11 is 4 marks)



P 5 9 0 1 6 A 0 1 3 2 4

12 On the grid, draw the graph of  $y = 2x - 3$  for values of  $x$  from  $-1$  to  $4$



(Total for Question 12 is 3 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



13 (a) Expand and simplify  $(e + 3)(e - 5)$

(2)

(b) Solve  $y = \frac{2y + 1}{5}$

Show clear algebraic working.

$y =$

(3)

(c) Solve  $x^2 + 3x - 18 = 0$

Show your working clearly.

(3)

(Total for Question 13 is 8 marks)



P 5 9 0 1 6 A 0 1 5 2 4

14 The table gives information about the price of gold.

|                                      | 1st February 2016 | 1st March 2016 |
|--------------------------------------|-------------------|----------------|
| Price of one ounce of gold (dollars) | 1126.50           | 1236.50        |

- (a) Work out the percentage increase in the price of gold between 1st February 2016 and 1st March 2016  
Give your answer correct to 3 significant figures.

(3) %

The price of one ounce of gold on 1st February 2016 was 1126.50 dollars.  
The price of gold increased by 19% from 1st February 2016 to 1st July 2016

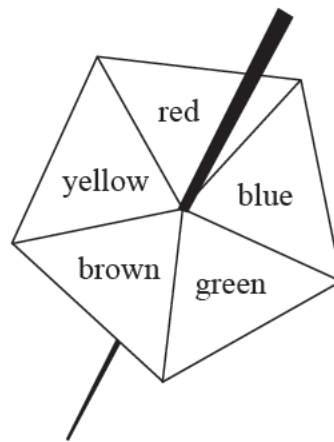
- (b) Work out the price of one ounce of gold on 1st July 2016  
Give your answer correct to the nearest dollar.

(3) dollars

(Total for Question 14 is 6 marks)



15 Here is a biased 5-sided spinner.



Kenny spins the spinner once.

The table gives the probabilities that the spinner lands on red or on blue or on green.

| Colour      | red  | blue | green | brown | yellow |
|-------------|------|------|-------|-------|--------|
| Probability | 0.15 | 0.26 | 0.33  |       |        |

(a) Work out the probability that the spinner lands on red or blue.

(1)

When the spinner is spun once, the probability that the spinner lands on brown is 0.06 more than the probability that the spinner lands on yellow.

Jenine spins the spinner 150 times.

(b) Work out an estimate for the number of times the spinner lands on yellow.

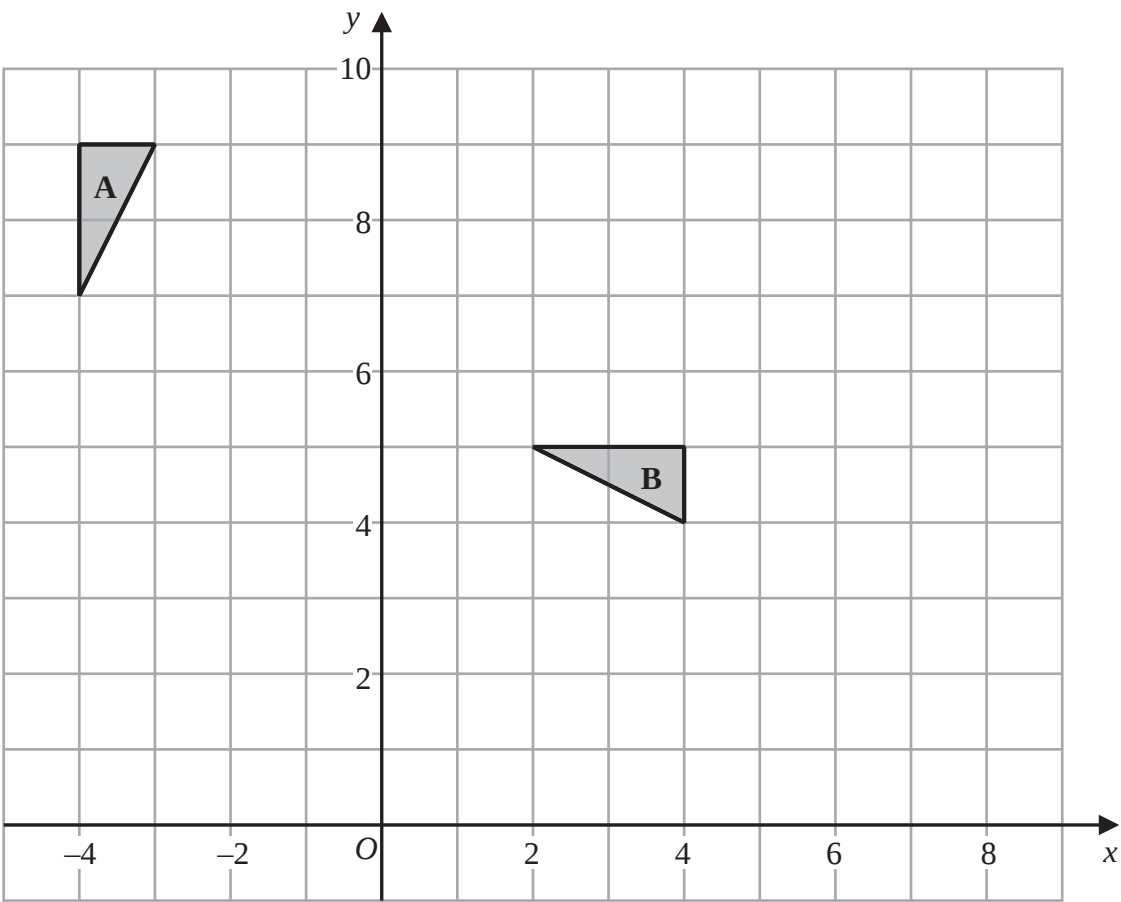
(4)

(Total for Question 15 is 5 marks)



P 5 9 0 1 6 A 0 1 7 2 4

16



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

(3)

(b) On the grid, translate triangle **A** by the vector  $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$   
Label the new triangle **C**.

(1)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

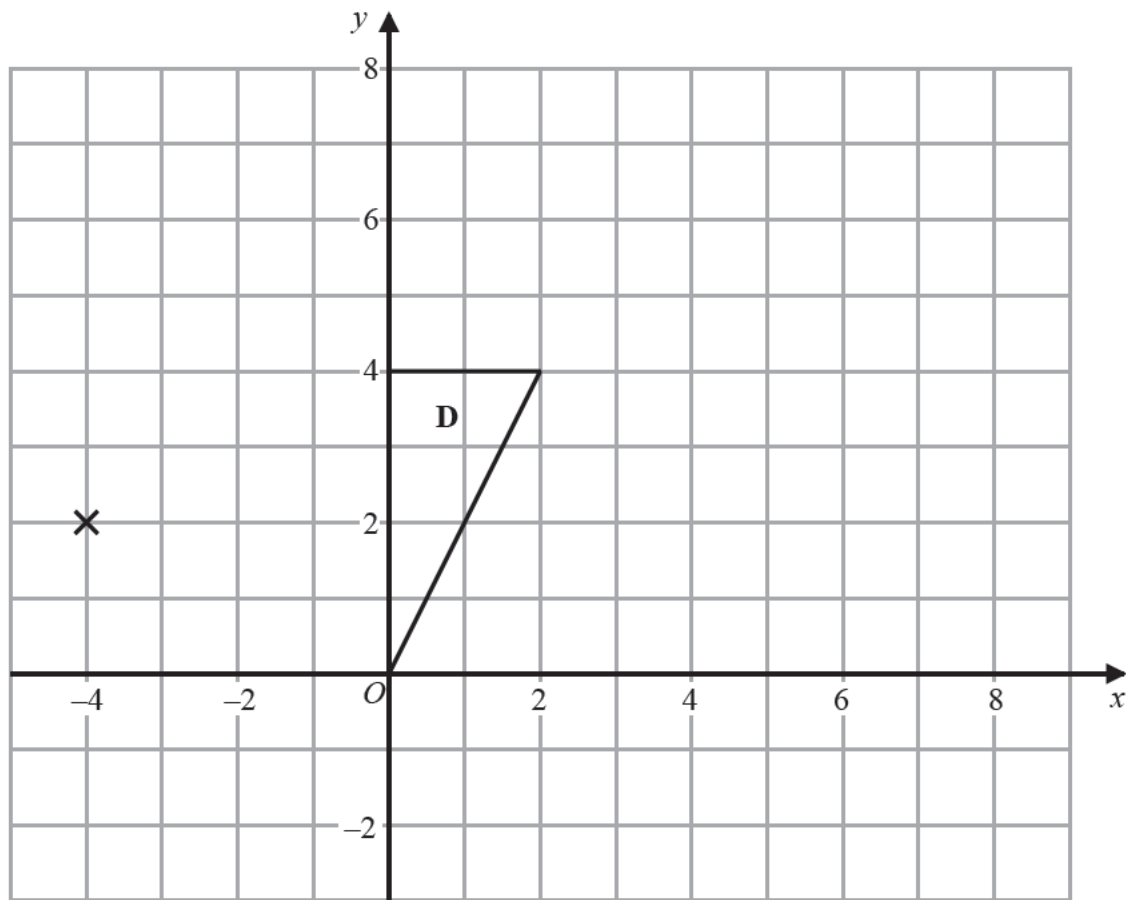
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA





- (c) On the grid, enlarge triangle **D** with scale factor  $\frac{1}{2}$  and centre  $(-4, 2)$

(2)

(Total for Question 16 is 6 marks)



P 5 9 0 1 6 A 0 1 9 2 4

- 17 The diagram shows an isosceles triangle  $ABC$  and a semicircle with centre  $O$  and diameter 12 cm.
- The point  $B$  lies on the semicircle.

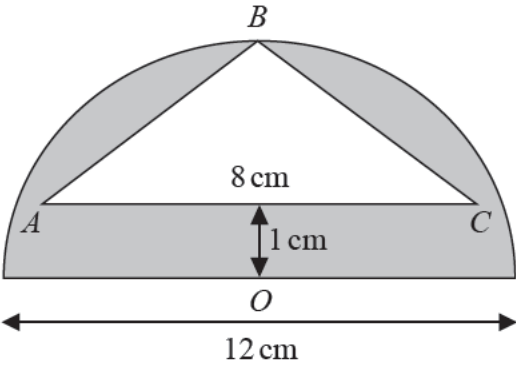


Diagram **NOT** accurately drawn

The line  $OB$  is the line of symmetry of the diagram.

$AC$  is 1 cm from the diameter of the semicircle and  $AC = 8$  cm.

Work out the area of the shaded region.

Give your answer correct to 3 significant figures.

cm<sup>2</sup>

(Total for Question 17 is 4 marks)



18 The table shows the volumes, in  $\text{km}^3$ , of four oceans.

| Ocean          | Volume ( $\text{km}^3$ ) |
|----------------|--------------------------|
| Arctic Ocean   | $1.88 \times 10^7$       |
| Atlantic Ocean | $3.10 \times 10^8$       |
| Indian Ocean   | $2.64 \times 10^8$       |
| Southern Ocean | $7.18 \times 10^7$       |

(a) Write  $7.18 \times 10^7$  as an ordinary number.

(1)

(b) Calculate the total volume of these four oceans.

(2)

$\text{km}^3$

The volume of the South China Sea is  $9\,880\,000 \text{ km}^3$

(c) Write  $9\,880\,000$  in standard form.

(1)

(Total for Question 18 is 4 marks)



P 5 9 0 1 6 A 0 2 1 2 4

19

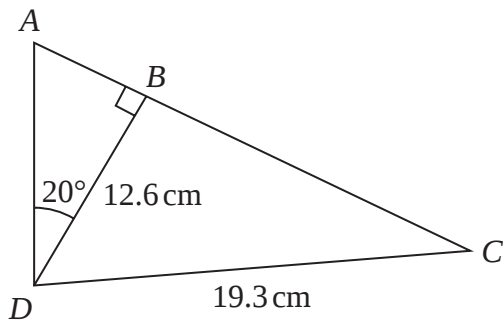


Diagram **NOT** accurately drawn

$ABC$  is a straight line.  
Work out the length of  $AC$ .  
Give your answer correct to 1 decimal place.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

cm

(Total for Question 19 is 5 marks)



20

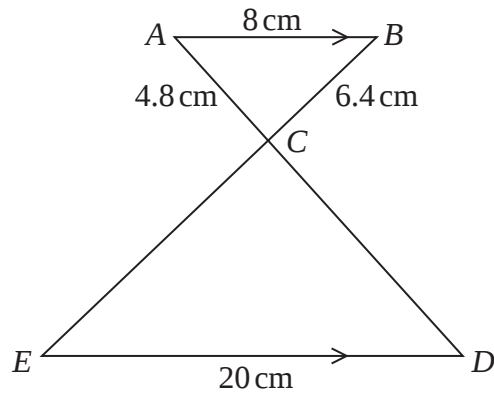


Diagram **NOT**  
accurately drawn

$AB$  is parallel to  $ED$ .  
 $ACD$  and  $BCE$  are straight lines.

$AB = 8 \text{ cm}$   
 $AC = 4.8 \text{ cm}$   
 $BC = 6.4 \text{ cm}$   
 $ED = 20 \text{ cm}$

Work out the length of  $BE$ .

cm

(Total for Question 20 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE

