

Write your name here

Surname

Other Names

# Mathematics

## 2019 Paper 1 (Non-Calculator) Foundation Tier

Time: 1 hour 30 minutes

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

### 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 may 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.

1 Simplify  $x^2 + x^2$

.....  
**(Total for question 1 is 1 mark)**

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2 Write 0.4 as a percentage

.....%  
**(Total for question 2 is 1 mark)**

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3 Write 5661 to the nearest 1000

.....  
**(Total for question 3 is 1 mark)**

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4 Write  $\frac{1}{4}$  as a decimal

.....  
**(Total for question 4 is 1 mark)**

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5 Change 2.5 kilograms into grams

.....grams  
**(Total for question 5 is 1 mark)**

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6 Write the following numbers in order of size.  
Start with the smallest number.

5.02

5.1

5.16

5.152

.....

**(Total for question 6 is 1 mark)**

7 (a) Work out  $15 - 6 \times 2$

.....

(1)

(b) Work out the cube root of 27

.....

(1)

**(Total for question 7 is 2 marks)**

8 There are only 15 beads in a bag.

There are      6 blue beads  
                  2 red beads  
                  7 green beads

A bead is picked at random from the bag

(a) Write down the probability the bead is red

.....

(1)

(b) Write down the probability the bead is white

.....

(1)

**(Total for question 8 is 2 marks)**

**9** Here are the first 5 terms of a sequence.

14                  17                  20                  23                  26

(a) Find the next term of this sequence.

.....  
(1)

(b) Work out the 10<sup>th</sup> term of this sequence.

.....  
(1)

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**(Total for question 9 is 2 marks)**

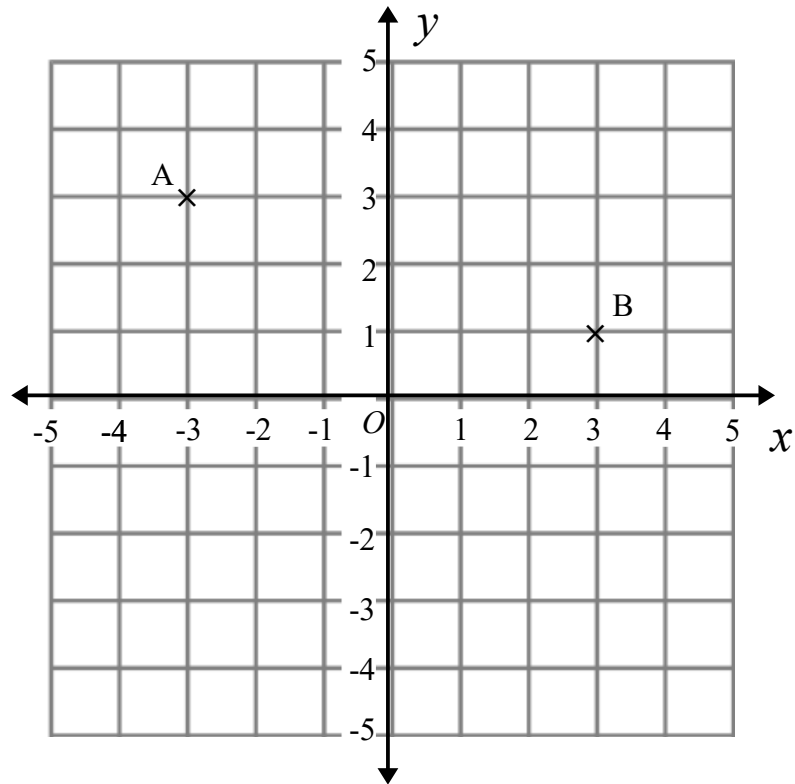
**10**     $a = 5$   
       $b = 4$

Work out the value of  $3a + 5b$

.....  
**(Total for question 10 is 2 marks)**

**11**    Find 21% of £160

.....  
**(Total for question 11 is 2 marks)**



- (a) On the grid mark with a cross ( $\times$ ) the point  $(1, -2)$ .  
Label the point C.

(1)

- (b) Write down the coordinates of point A.

(....., .....)  
(1)

- (c) Write down the coordinates of the midpoint of AB.

(....., .....)  
(1)

**(Total for question 12 is 3 marks)**

- 13** Mo goes to a Cafe.  
He buys  
    2 coffees for £1.80 each  
    3 teas for £1.50 each  
    2 cakes for £2.10 each

Work out the total amount that Mo spends.

£.....

---

**(Total for question 13 is 2 marks)**

- 14** A map has the scale of 1 : 50000

The distance between two points on the map is 10 cm.

Work out the real distance between the two points. Give your answer in kilometres.

.....km

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

**15** Work out  $42 \times 316$

.....

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

**16** In a bag there are blue sweets, red sweets and yellow sweets.

The number of red sweets is three times the number of blue sweets.

The number of yellow sweets is half the number of red sweets.

Write down the ratio of blue sweets to red sweets to yellow sweets.

Give your answer in the form  $a:b:c$  where  $a$ ,  $b$  and  $c$  are whole numbers

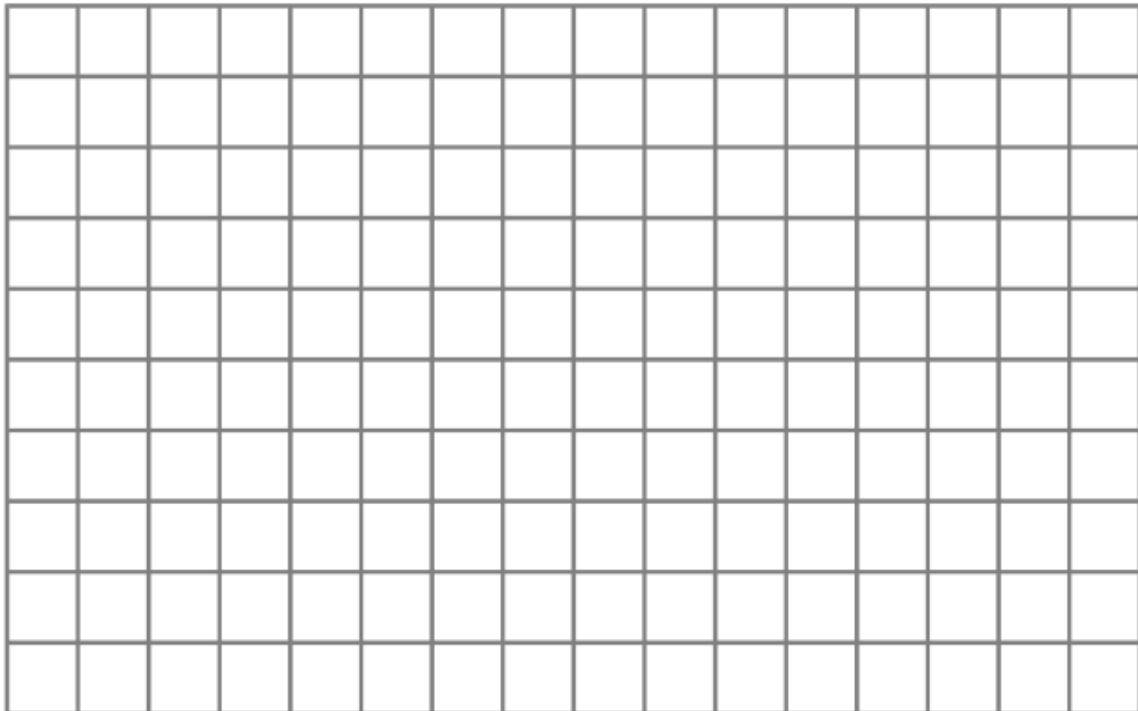
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**(Total for question 16 is 2 marks)**

17 The table below gives some information about the favourite sport of 30 students

Sport	Number of boys	Number of girls
Football	6	7
Rugby	5	3
Cricket	3	2
Tennis	1	3

On the grid below, draw a suitable diagram to show this information

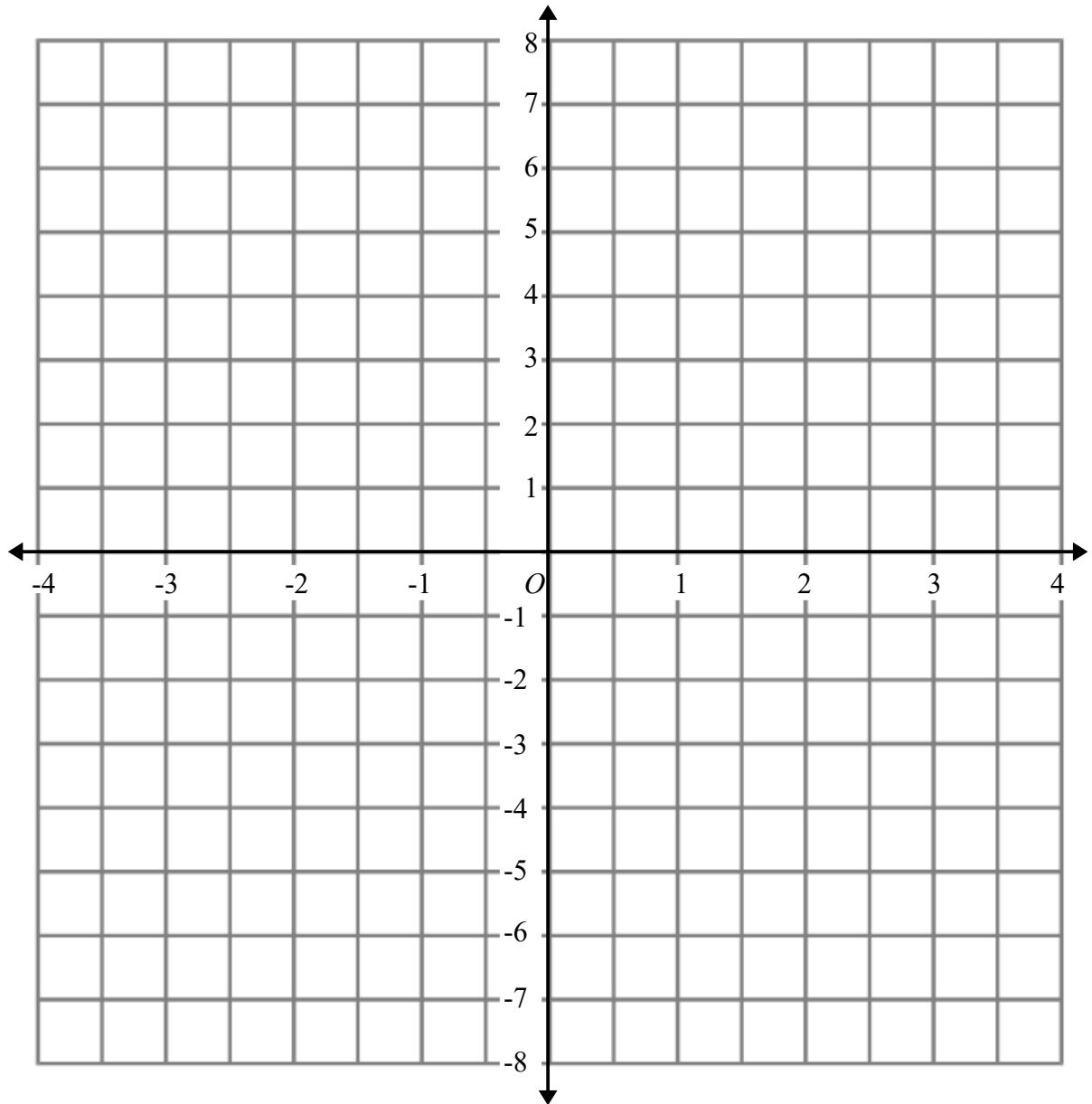


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(Total for question 17 is 4 marks)



18 On the grid, draw the graph of  $x + y = 4$  for  $x$  values from -4 to 4



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(Total for question 18 is 3 marks)

19 Three packs of tea bags are available in the supermarket

<b>Pack A</b> 240 tea bags for £5	<b>Pack B</b> 200 tea bags for £4	<b>Pack C</b> 160 tea bags for £3
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Which pack offers the best value for money

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**(Total for question 19 is 4 marks)**

20 100 students attended a revision lesson at the weekend.

Each student went to Maths or English or Science.

55 of these students attended on Saturday.

Over the weekend a total of 40 students went to Maths.

12 of the 27 students that went to Science went on Sunday.

10 students went to English on Saturday.

How many students went to the Maths revision lesson on Saturday?

.....  
**(Total for question 20 is 4 marks)**

---

21 (a) Work out  $\frac{2}{5} \div \frac{3}{4}$

.....  
(2)

(b) Work out  $\frac{1}{5} + \frac{2}{7}$

.....  
(2)

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**(Total for question 21 is 4 marks)**

22 Solve  $3(x + 4) = 19$

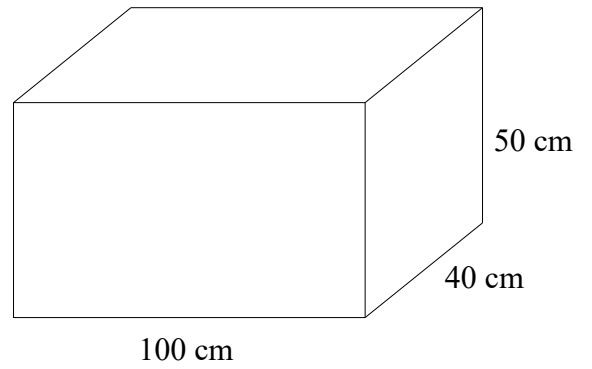
.....  
**(Total for question 22 is 2 marks)**

**23** The diagram shows a box.

5 of these boxes are going to be painted.

Each pot of paint can cover  $6\text{m}^2$ .

How many pots of paint are needed to paint the 5 boxes?



.....pots

**(Total for question 23 is 4 marks)**

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24 In a box there are blue pens, red pens and green pens.  
The ratio of blue pens to red pens to green pens is 5:3:2

There are 18 more blue pens than red pens.  
How many green pens are in the box?

.....  
**(Total for question 24 is 3 marks)**

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25 Four builders working 6 hours a day can build a wall in two days.

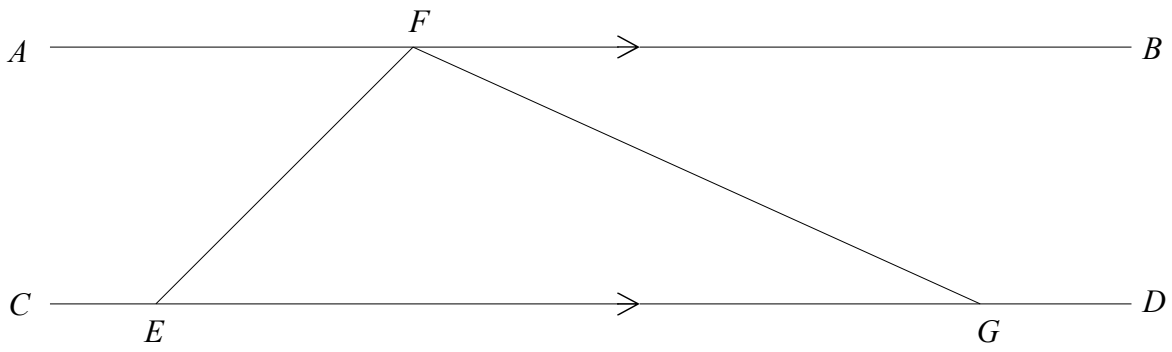
How many days will it take two builders working 8 hours a day to build the same wall.

.....days  
(b) State one assumption you made in your working out to part (a). (2)

.....  
.....  
(1)

**(Total for question 25 is 3 marks)**

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$AB$  and  $CD$  are parallel.

Angle  $CEF = 124^\circ$

Angle  $EFG = 93^\circ$

Find the size of angle  $FGD$ .

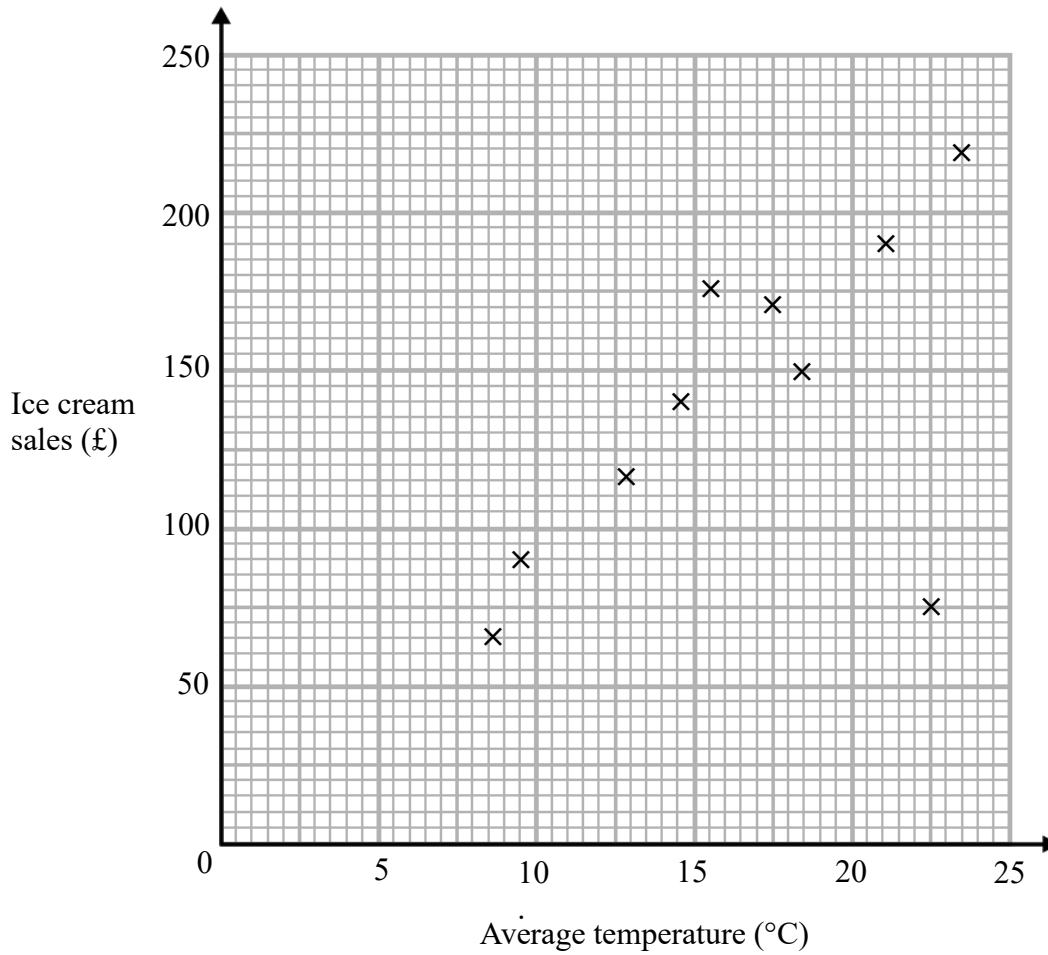
You must show how you got your answer.

.....<sup>o</sup>

**(Total for question 26 is 3 marks)**

27 The average daytime temperature for 10 days is recorded.  
 A shop also records its ice cream sales for each of the 10 days.

The scatter graph shows this information.



(a) What type of correlation does the scatter graph show?

.....  
 (1)

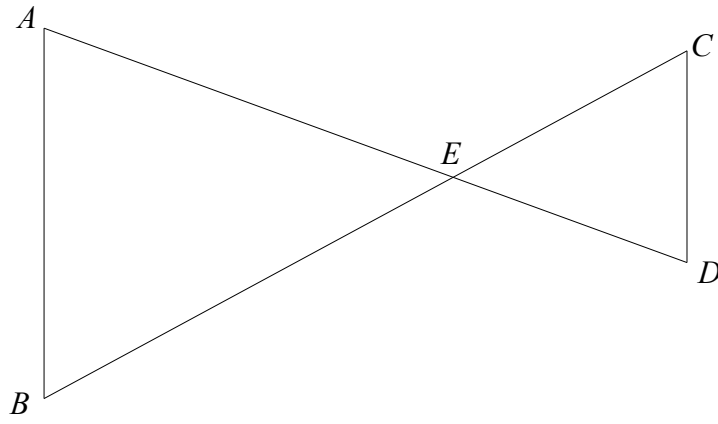
(b) One of the points is an outlier. Write down the coordinates for this point.

(.....), (.....)  
 (1)

(c) On another day the temperature was 12°. Estimate the ice cream sales on this day.

£.....  
 (2)

**(Total for question 27 is 4 marks)**



*AB* and *CD* are parallel lines.

*AD* and *BC* are straight lines

*AB* = 6 cm,

*CD* = 4 cm,

*BE* = 9 cm,

(a) Find the length of *CE*

.....cm

(1)

*AD* = 12.5 cm

(b) Find the length of *AE*

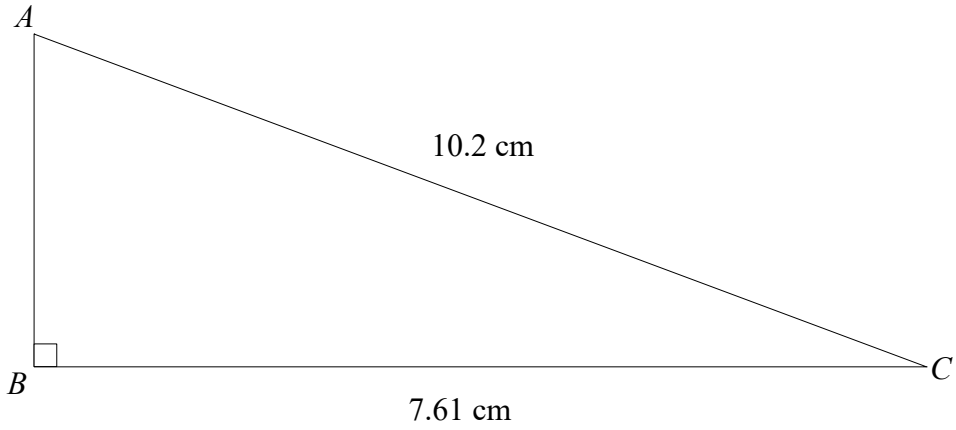
.....cm

(2)

**(Total for question 28 is 3 marks)**



29



(a) Estimate the length of  $AB$

.....cm  
(2)

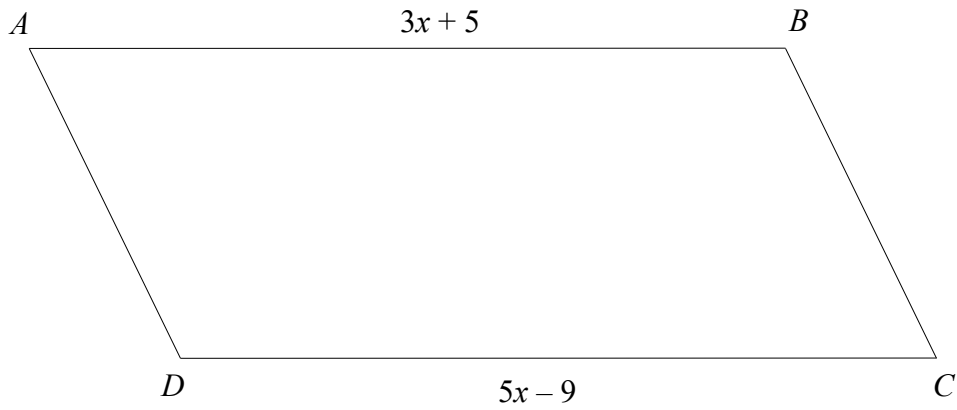
(b) Is your answer to part (a) an underestimate or an overestimate?  
Give a reason for your answer.

.....  
.....  
(1)

**(Total for question 29 is 3 marks)**

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30



$ABCD$  is a parallelogram  
All measurements are in centimetres.  
The height of the parallelogram is 5cm.

Find the area of  $ABCD$

.....

**(Total for question 30 is 4 marks)**

31 Solve the simultaneous equations

$$5x + 2y = 24$$

$$3x - y = 21$$

$$x = \text{.....}$$

$$y = \text{.....}$$

**(Total for question 31 is 3 marks)**