Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
16 – 17	
18 – 19	
20 – 21	
22 – 23	
24 – 25	
26 – 27	
28 – 29	
30	
TOTAL	

AQA

General Certificate of Secondary Education
Foundation Tier
June 2015

Mathematics (Linear) 4365/2F

Paper 2

F

Thursday 11 June 2015 1.30 pm to 3.15 pm

For this paper you must have:
- a calculator
- mathematical instruments.

Time allowed
- 1 hour 45 minutes

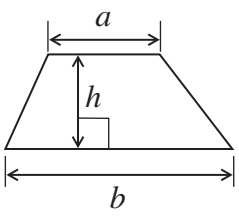
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 105.
- The quality of your written communication is specifically assessed in Questions 7, 16 and 18. These questions are indicated with an asterisk (*).
- You may ask for more answer paper, tracing paper and graph paper. These must be tagged securely to this answer book.

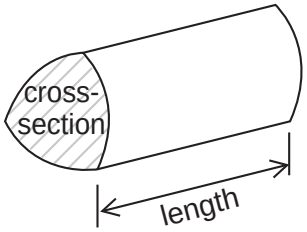
Advice
- In all calculations, show clearly how you work out your answer.

Formulae Sheet: Foundation Tier

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



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

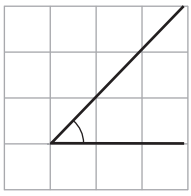


Do not write outside the box

Answer **all** questions in the spaces provided.

1 (a) Circle the word that describes the marked angle.

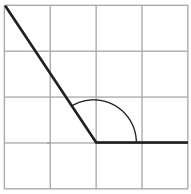
[1 mark]



Reflex Obtuse Acute

1 (b) Circle the word that describes the marked angle.

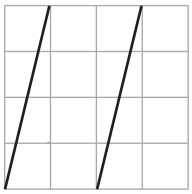
[1 mark]



Reflex Obtuse Acute

1 (c) Circle the word that describes the **two** lines drawn on the square grid.

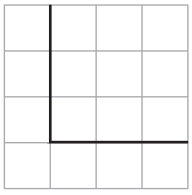
[1 mark]



Vertical Horizontal Perpendicular Parallel

1 (d) Circle the word that describes the **two** lines drawn on the square grid.

[1 mark]

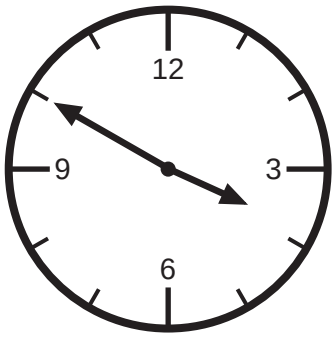


Vertical Horizontal Perpendicular Parallel

4

Do not write outside the box

2 (a)



What time in the afternoon is shown on the clock?
Circle your answer.

[1 mark]

13:10 13:50 15:10 15:50

2 (b) Here is a TV programme list.

10:00 – 11:45	Gymnastics
11:45 – 13:15	Basketball
13:15 – 14:30	Swimming
14:30 – 22:30	Cricket
22:30 – 00:15	Highlights

John watches Swimming and half of the Cricket.

How long does he spend watching TV?
Give your answer in hours and minutes.

[2 marks]

.....

.....

.....

Answer ..... hours ..... minutes

Do not write outside the box

2 (c) Here is the **same** TV programme list.
The times are shown using the 12-hour clock system.

Complete the missing times using the 12-hour clock system.

[2 marks]

10:00 am –	11:45 am	Gymnastics
11:45 am –	1:15 pm	Basketball
1:15 pm –	..... pm	Swimming
..... pm –	10:30 pm	Cricket
10:30 pm –	..... am	Highlights

3 Here are some statements about a trapezium.

Tick whether each one is true or false.

[3 marks]

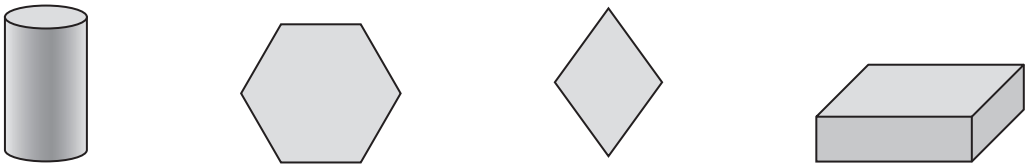
	True	**False**
It has two parallel sides	☐	☐
It has three right angles	☐	☐
It has two lines of symmetry	☐	☐

8

Do not write outside the box

4 Join each shape with its correct name.

[2 marks]



Cuboid Rhombus Cylinder Hexagon

5 8 counters are in a bag.
The counters are blue, white or yellow.

One counter is taken at random from the bag.

The chance it is blue is evens.

The chance it is white is more likely than yellow.

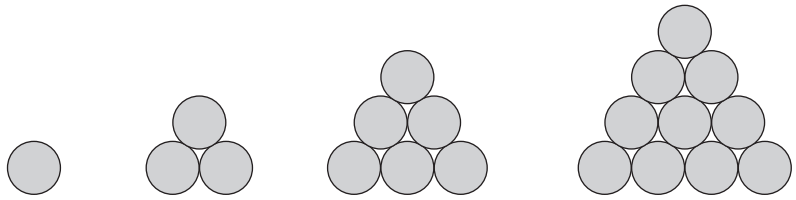
How many counters of each colour are in the bag?
Write your answers in the table.

[2 marks]

Colour	Blue	White	Yellow
Number in the bag			

Do not write outside the box

6 Circles are used to make a sequence of patterns.



Pattern 1 Pattern 2 Pattern 3 Pattern 4

6 (a) Complete this table.

Pattern number	1	2	3	4	5
Number of circles	1	3	6	10	

[1 mark]

6 (b) Here is a formula for a **different** sequence of patterns.

Number of circles = Pattern number × 2

Use this formula to draw Pattern 3 and Pattern 4
Pattern 1 and Pattern 2 are drawn for you.

[2 marks]

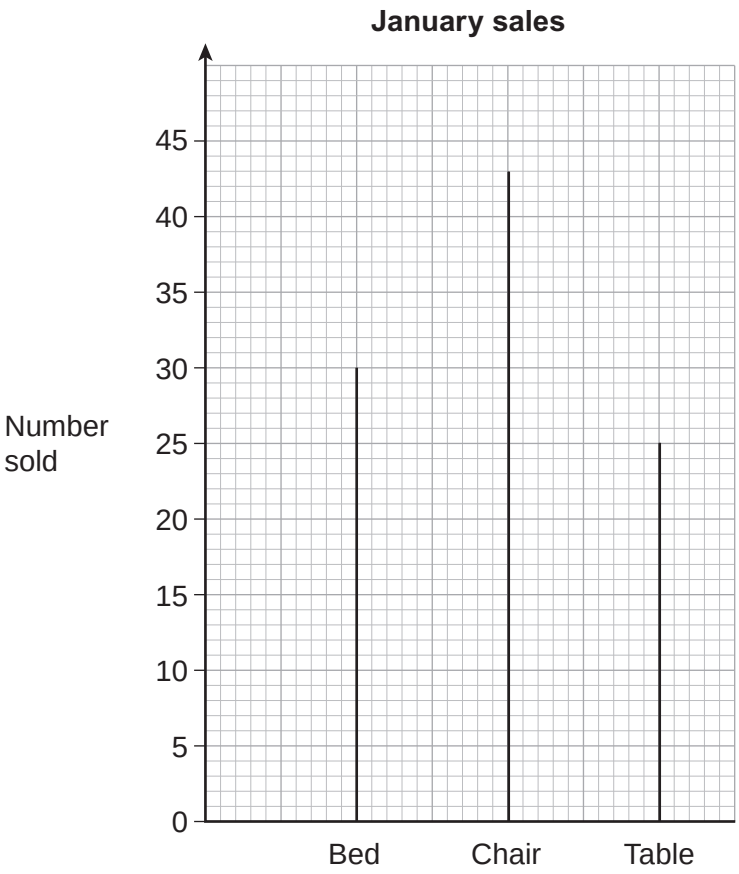
Pattern 1 Pattern 2 Pattern 3 Pattern 4

7

Do not write outside the box

7 A shop sells beds, chairs and tables.

7 (a) The graph shows information about the number of items sold in **January**.



Work out the **total** number of items sold in January.

[2 marks]

Answer .....

Do not write outside the box

*7 (b) Here is some information about the number of items sold in **February**.

	Bed	Chair	Table	
Number sold	55			Total = 155

The number of chairs sold was **20 more** than the number of tables sold.

Draw a pictogram to show the number of items sold in February.
Use the key given.

[4 marks]

February sales

Key: ☐ represents 10 items sold

Bed

Chair

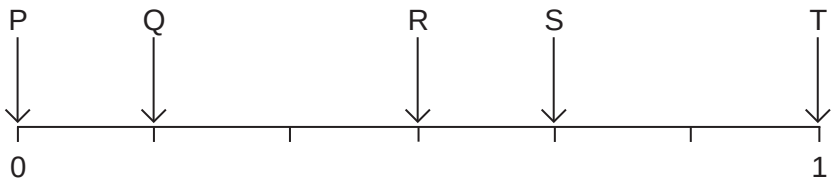
Table

Turn over for the next question

6

Do not write outside the box

8 Here is a probability scale.

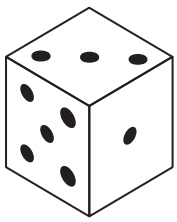


8 (a) Which letter represents certain?

[1 mark]

Answer .....

8 (b) An ordinary fair 6-sided dice is rolled.



Write the letter of the arrow that matches the probability of each of the following.
The first one has been done for you.

[2 marks]

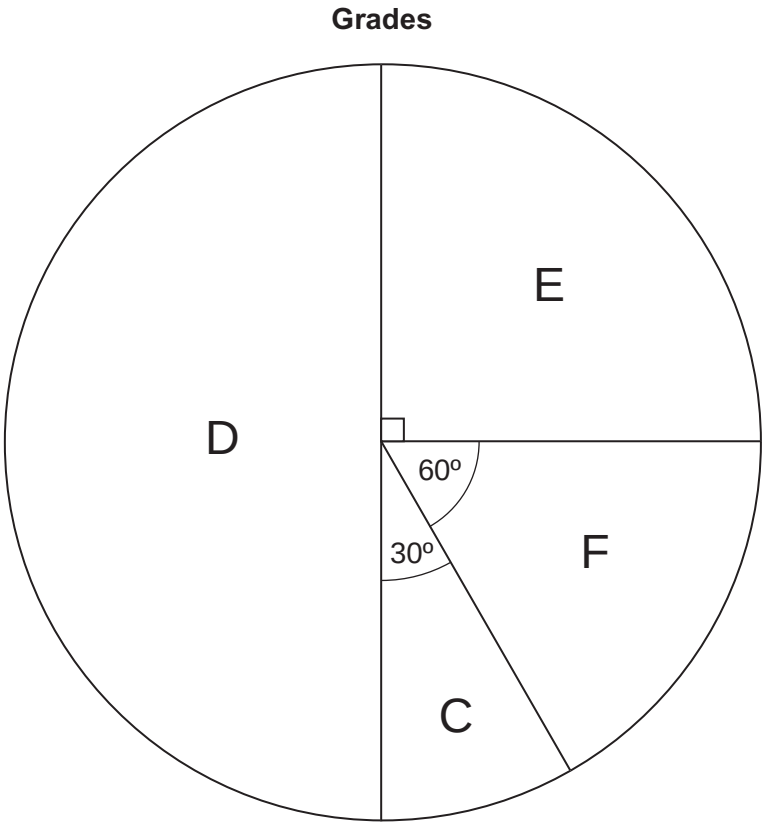
Rolling a number less than 5 ..... S

Rolling an even number .....

Rolling a 3 .....

Do not write outside the box

9 The pie chart shows information about the grades of 240 students in a test.



9 (a) How many students get grade C?

[2 marks]

.....

.....

Answer .....

9 (b) What fraction of the students get grade F?
Give your answer in its simplest form.

[2 marks]

.....

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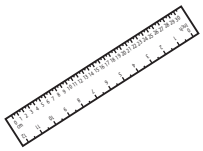
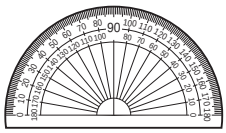
Answer .....

7

Do not write outside the box

10 A school shop sells these items.

Pen	Ruler	Protractor	Calculator
			
£1.25	15p	30p	£1.20

10 (a) Write down an expression for the cost of x rulers in pence.

[1 mark]

Answer ..... pence

10 (b) Write down an expression for the cost of y protractors and w calculators.
Give your answer in pence.

[2 marks]

.....

Answer ..... pence

Do not write outside the box

10 (c) Paul bought **three** items.

He paid with a £5 note.
His change was £1.35

Which items did he buy?

[3 marks]

.....

.....

.....

Item 1 .....

Item 2 .....

Item 3 .....

10 (d) A set has one pen, one ruler, one protractor and one calculator.

Work out the maximum number of sets that can be bought with £20

[3 marks]

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Answer .....

9

Do not write outside the box

11 (a) There are 180 people in a cinema.

$\frac{3}{5}$ of the people are adults.

$\frac{1}{4}$ of the adults are female.

How many of the adults are female?

[3 marks]

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Answer .....

11 (b) 30% of the 180 people buy popcorn.

How many people buy popcorn?

[2 marks]

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Answer .....

Do not write outside the box

12 The stem-and-leaf diagram shows how long Dylan used the internet on 15 days.

2	0	3	4	6	7	8	8
3	1	2	4	7	9		
4	2	3	5				

Key: 2 | 3 represents 23 minutes

The first 35 minutes on the internet each day are free.
The charge is £1.45 for each minute **above** 35 minutes.

Work out the total charge for using the internet on the 15 days.

[4 marks]

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Answer £ .....

Turn over for the next question

9

Do not write outside the box

13 Here are two timetables for trains to London.

Train timetable Monday to Friday

Sheffield	06:47	07:41	08:27	09:27	10:27
Chesterfield	06:59	07:55	08:39	09:39	10:39
Leicester	07:52	08:52	09:23	10:23	11:23
Kettering	08:14				
London	09:09	10:05	10:34	11:34	12:33

Train timetable Monday to Friday

Nottingham	06:28	06:49	08:02	09:02	10:02
Leicester	06:57	07:17	08:33	09:33	10:33
Kettering	07:22	07:42	08:56	09:56	10:56
Luton Airport	08:15	08:30	09:34	10:34	11:34
London	08:24	08:43	10:00	11:01	12:00

13 (a) Ryan catches the 06:47 train from Sheffield.
He gets off the train at Kettering.

He spends 30 minutes in Kettering station café.
He then catches the next train to London.

What time does he arrive in London?

[1 mark]

.....

Answer .....

Do not write outside the box

13 (b) There are **no direct** trains from Sheffield to Luton Airport.

Lucy wants to go from Sheffield to Luton Airport.
She wants to arrive at Luton Airport between 10:00 and 11:00
She wants to leave Sheffield as late as possible.

Complete the places and times to plan her journey.

[4 marks]

Depart	Sheffield	at	.....
Arrive	.....	at	.....
Depart	.....	at	.....
Arrive	Luton Airport	at	.....

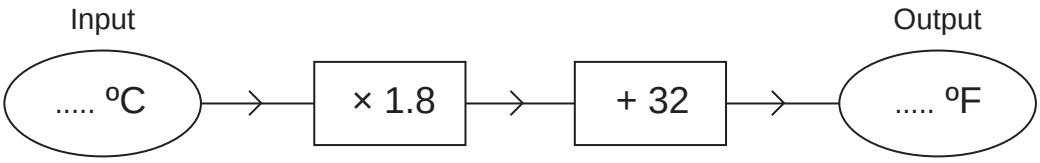
Turn over for the next question

5

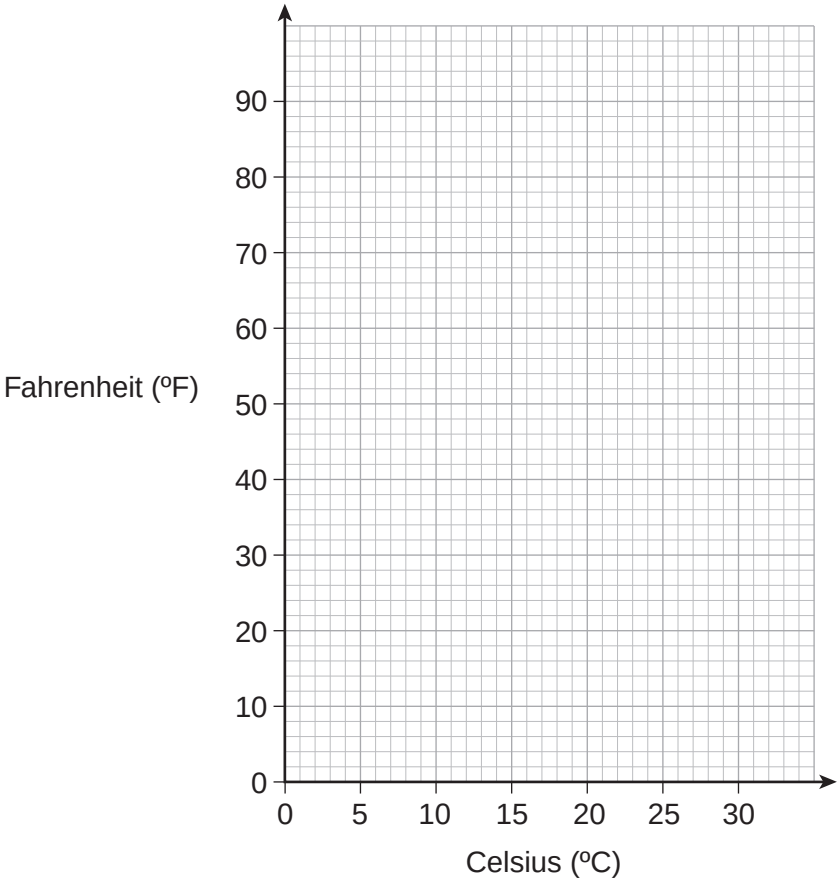
Do not write outside the box

14 This number machine converts from Celsius (ºC) to Fahrenheit (ºF).

[4 marks]

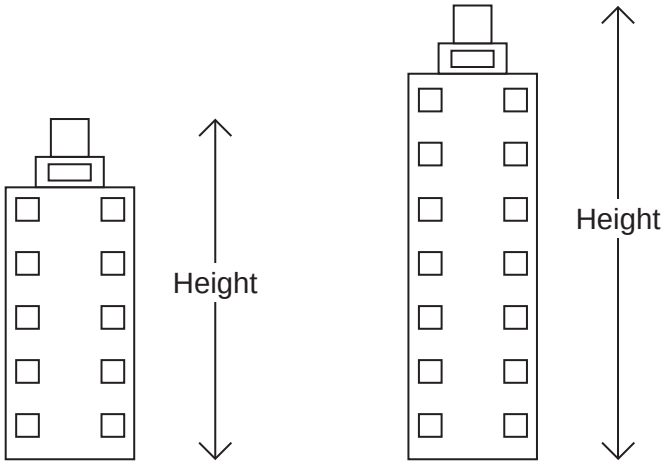


Use the number machine to draw a conversion graph from ºC to ºF.



Do not write outside the box

15 Here is a scale drawing of two buildings.



The **difference** between the actual heights of the buildings is 20 metres.

Work out the height of the taller building.

[4 marks]

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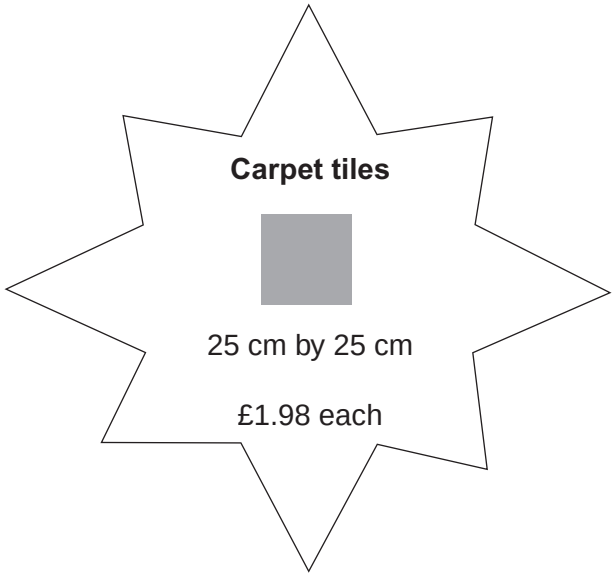
Answer ..... m

8

Do not write outside the box

16 (a) Liam wants to carpet his bedroom floor with tiles.

The floor is a rectangle measuring 5 metres by 3 metres.



Liam buys the exact number of tiles needed.

How much does he pay?

[4 marks]

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Answer £ .....

Do not write outside the box

***16 (b)** Kim buys a carpet for a room.

The carpet measures 6 metres by 6 metres.
Kim pays £390 for the carpet.

The room measures 5 metres by 5 metres.

Work out the cost of the carpet she does **not** use.

[4 marks]

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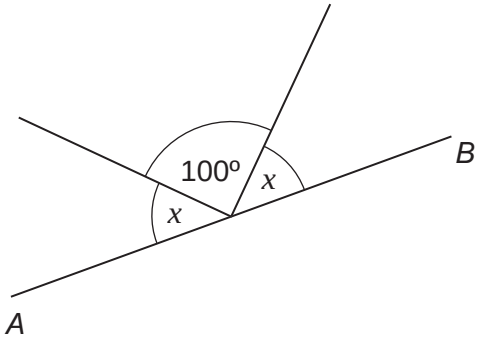
Answer £ .....

Turn over for the next question

8

Do not write outside the box

17 (a) *AB* is a straight line.



Not drawn accurately

Work out the size of angle x.

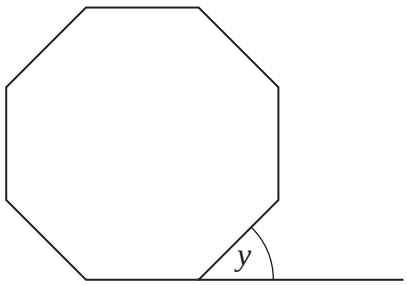
[2 marks]

.....

.....

Answer ..... degrees

17 (b) The diagram shows a regular octagon.



Not drawn accurately

The base line of the octagon is extended.

Work out the size of angle y.

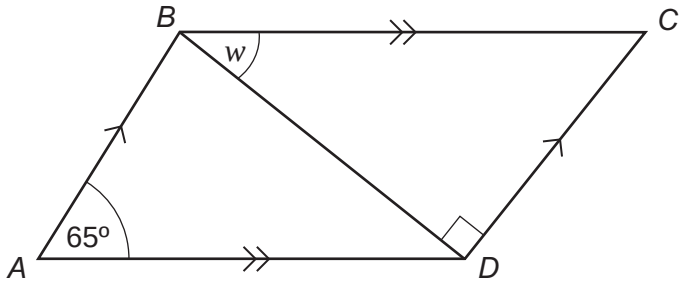
[2 marks]

.....

Answer ..... degrees

Do not write outside the box

17 (c) *ABCD* is a parallelogram.
BD is a diagonal.



Not drawn accurately

Work out the size of angle w.

[3 marks]

.....

.....

Answer ..... degrees

Turn over for the next question

7

Do not write outside the box

***18** Laura buys a saddle in the UK for £850
Delivery is free.

Steve buys the same saddle from Holland for 990 Euros.
He pays 15 Euros for delivery.

£1 = 1.18 Euros

Including the delivery charge, whose saddle is **cheaper**?
You **must** show your working.

[3 marks]

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Answer .....

Do not write outside the box

19 (a) Expand and simplify $3(2x - 1) + 2(x - 3)$

[2 marks]

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.....

Answer .....

19 (b) Write down the whole numbers that satisfy $3 < 2n \leqslant 10$

[2 marks]

.....

.....

Answer .....

19 (c) Solve $4(3x - 5) = 22$

[3 marks]

.....

.....

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.....

x = ...

10

Do not write outside the box

20 A drink is made by mixing 650 ml of water with 150 ml of fruit juice.

What percentage of the drink is fruit juice?

[2 marks]

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.....

Answer ..... %

Do not write outside the box

21 (a) Divide £720 in the ratio 5 : 1

[2 marks]

.....

.....

Answer £ ..... and £ .....

21 (b) Sarah has £135
Gemma has £70
Beth has £35

Sarah gives some money to Gemma and Beth.

The ratio of the amount of money Sarah, Gemma and Beth have **now** is 3 : 2 : 1

How much money did Sarah give to Gemma?

[4 marks]

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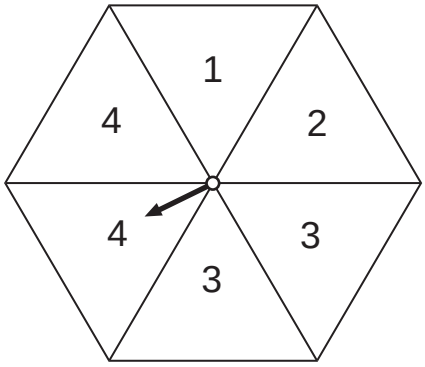
Answer £ .....

8

Do not write outside the box

22 The arrow on this spinner is equally likely to land on each section.



The arrow is spun 72 times.

How many times do you expect the arrow to land on 4?

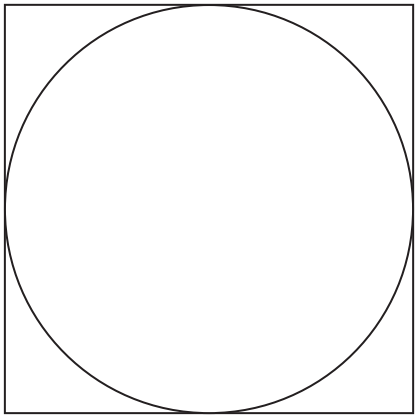
[2 marks]

.....

Answer .....

Do not write outside the box

23 The area of this square is 36 cm^2



Not drawn accurately

Work out the circumference of the circle.

[3 marks]

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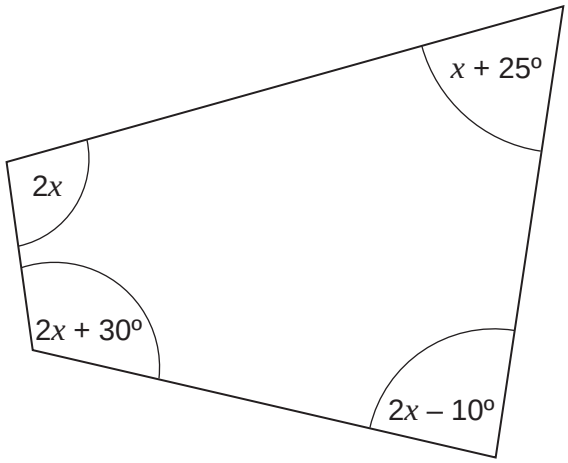
Answer ..... cm

Turn over for the next question

5

Do not write outside the box

24 The diagram shows a quadrilateral.



Not drawn accurately

Work out the value of x.

[4 marks]

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.....

.....

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.....

.....

Answer ..... degrees

END OF QUESTIONS

4

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ANSWER IN THE SPACES PROVIDED

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED