

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										



General Certificate of Secondary Education
Foundation Tier
June 2015

Mathematics (Linear)

4365/1F

Paper 1

Thursday 4 June 2015 9.00 am to 10.15 am

F

For this paper you must have:

- mathematical instruments.

You must **not** use a calculator.



Time allowed

- 1 hour 15 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 70.
- The quality of your written communication is specifically assessed in Questions 1, 6 and 10. 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.

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	
TOTAL	



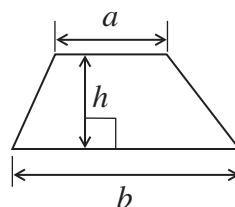
J U N 1 5 4 3 6 5 1 F 0 1

WMP/Jun15/4365/1F/E4

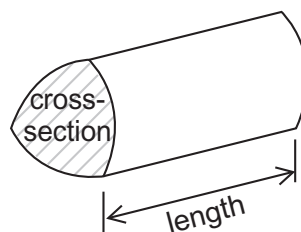
4365/1F

Formulae Sheet: Foundation Tier

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



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



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

- 1** These are the favourite drinks of 20 people.

Tea
Milk
Coffee
Orange

Milk
Orange
Milk
Tea

Orange
Coffee
Orange
Milk

Milk
Orange
Tea
Orange

Orange
Tea
Orange
Coffee

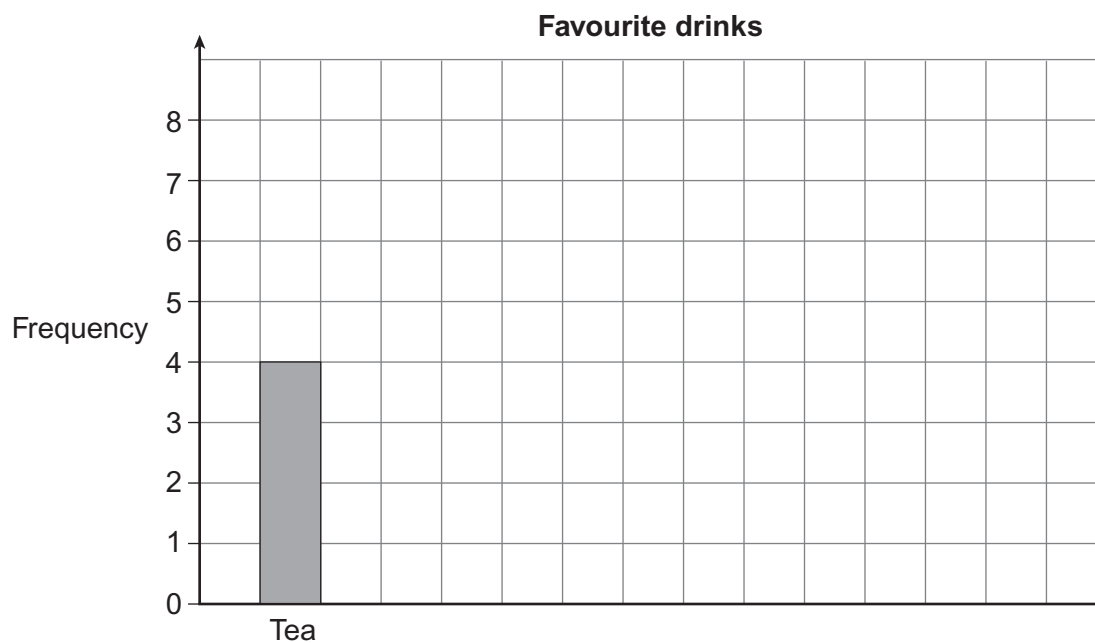
- 1 (a)** Complete the table to show the results.

[2 marks]

Drink	Tally	Frequency
Tea		4
Milk		
Coffee		
Orange		
Total		20

- *1 (b)** Complete the bar chart to show the results.

[2 marks]



- 2 (a)** Work out the sum of the multiples of 9 between 30 and 60

[3 marks]

.....

.....

.....

.....

Answer

- 2 (b)** Josh writes down the whole numbers from 1 to 100

How many times does he write the digit 9?
Some of the numbers are shown to help you.

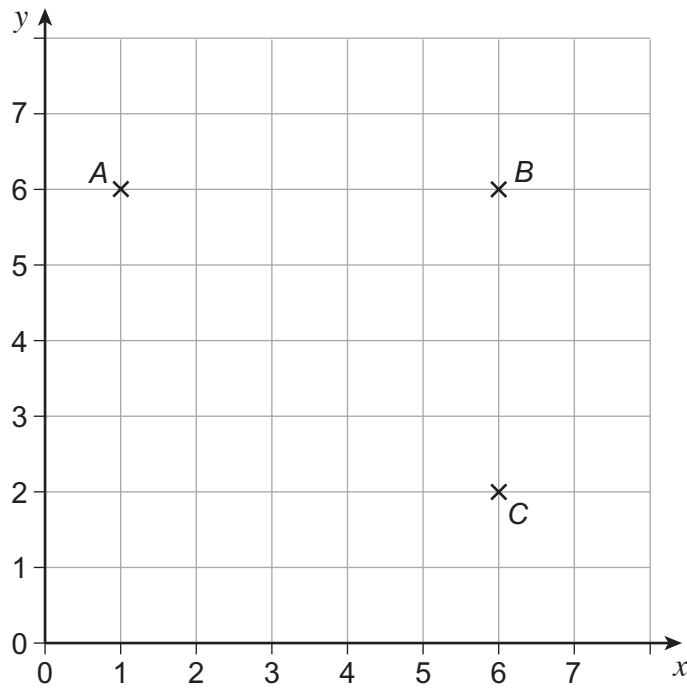
1 2 3 98 99 100

[2 marks]

Answer



- 3** A , B and C are plotted on a centimetre grid.



- 3 (a)** $ABCD$ is a rectangle.

Plot the point D on the grid.

[1 mark]

- 3 (b)** Work out the area of $ABCD$.
State the units of your answer.

[2 marks]

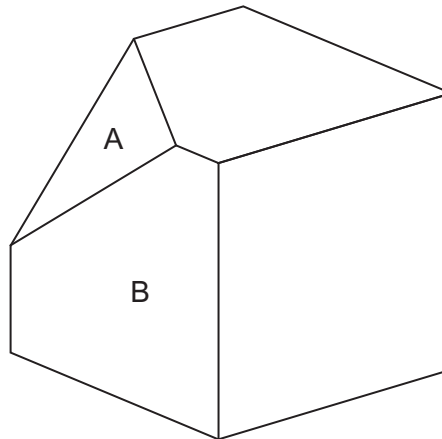
.....

.....

Answer



- 4** A cube has one corner cut off as shown.



- 4 (a)** What shape is face A?
Circle your answer.

[1 mark]

hexagon

octagon

pentagon

triangle

- 4 (b)** What shape is face B?
Circle your answer.

[1 mark]

hexagon

pentagon

rhombus

trapezium

- 4 (c)** Face C is opposite face B.

What shape is face C?

[1 mark]

Answer



5 For each statement choose one of the following to make it correct.

greater than

less than

equal to

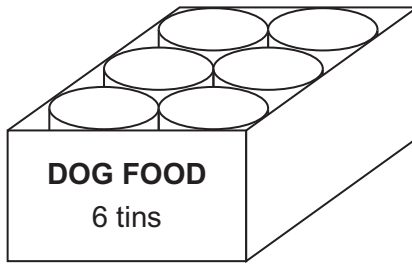
[2 marks]

2.37 is 2.73

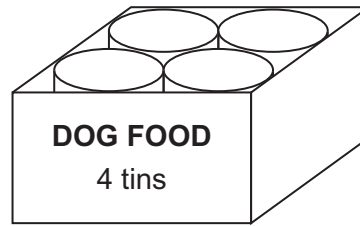
0.65 is $\frac{6}{10}$

42% is 0.42

*6 Dog food comes in boxes of 6 tins or 4 tins.



£3.00



£1.80

Which box is better value?
You **must** show your working.

[3 marks]

.....

.....

.....

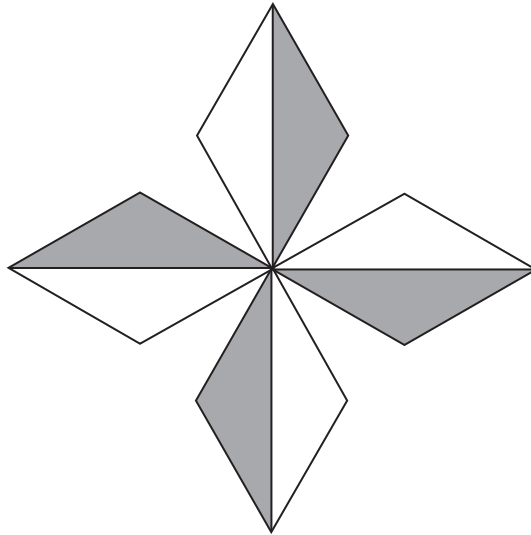
.....

.....

Answer

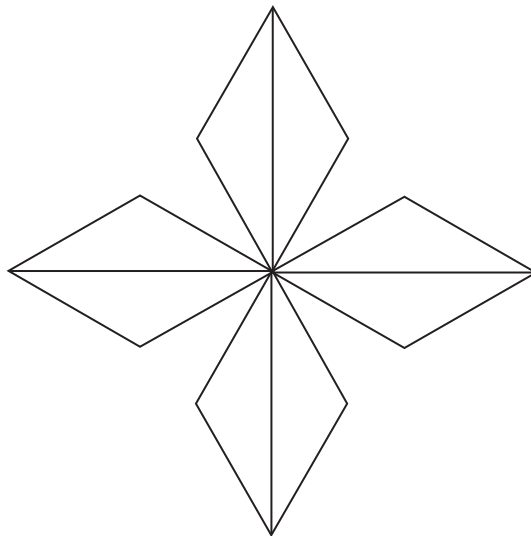


- 7 This diagram has been shaded so that it has
- no lines of symmetry
- and**
- rotational symmetry of order 4



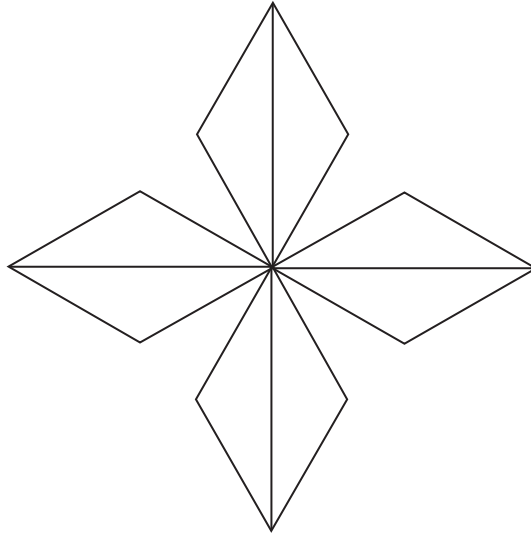
- 7 (a) Shade parts of this diagram so that it has
- two lines of symmetry
- and**
- rotational symmetry of order 2

[1 mark]



- 7 (b)** Shade parts of this diagram so that it has
one line of symmetry
and
no rotational symmetry.

[1 mark]



- 8** A square has a perimeter of 20 cm
Work out its area.

[2 marks]

.....

.....

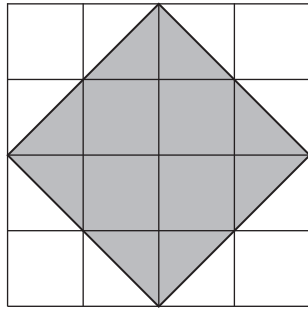
.....

.....

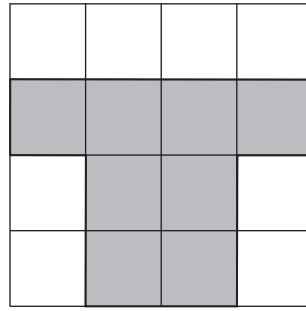
Answer cm²



- 9 Two shapes are drawn on centimetre grids.



A



B

Which statement is true?
Tick a box.
You **must** show your working.

[3 marks]

A has a **smaller** area than B.

☐

A has the **same** area as B.

☐

A has a **greater** area than B.

☐

.....

.....

.....

.....

.....

.....

.....



- *10 (a)** The price of a jacket is £70
The price is to be reduced by 15%

How much will the price be reduced by?

[2 marks]

.....

.....

.....

.....

Answer £

- 10 (b)** The price of a dress is £200
The price is to be reduced by £40

What percentage will the price be reduced by?

[2 marks]

.....

.....

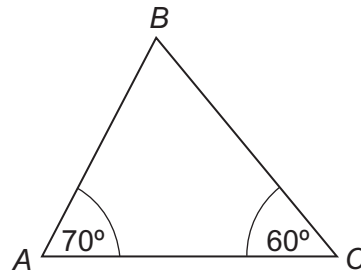
.....

.....

.....

Answer %



11 (a)Not drawn
accurately

What type of triangle is ABC ?
Circle your answer.

[1 mark]

Equilateral

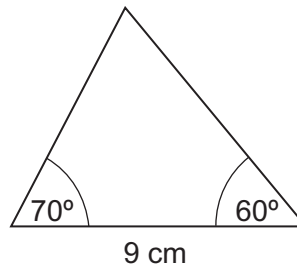
Isosceles

Right-angled

Scalene



11 (b) You will need a ruler and a protractor to answer this question.



Not drawn
accurately

Make an accurate drawing of this triangle.
The base has been drawn for you.

[2 marks]



12 These objects are used to make cot mobiles.

Heart



8 grams

Moon



10 grams

Cloud



20 grams

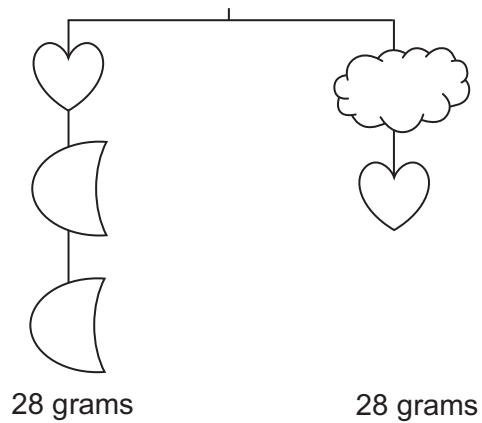
Face



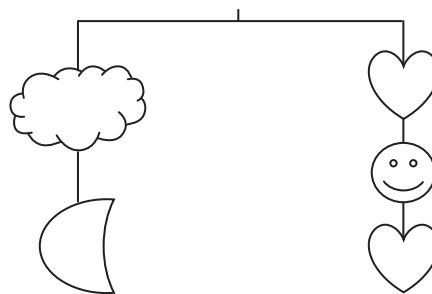
Star



The total weight on each side of a cot mobile must be the same.
For example



12 (a) Here is a cot mobile.



How much does a **face** weigh?

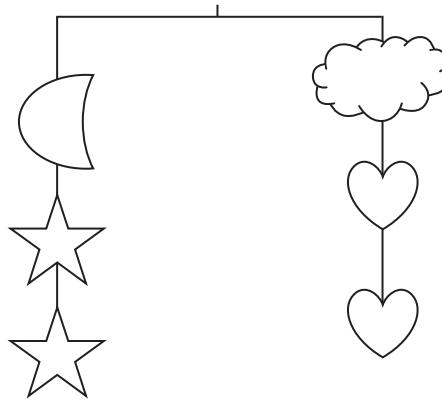
[2 marks]

.....

Answer grams



12 (b) Here is another cot mobile.



How much does a **star** weigh?

[2 marks]

.....

.....

.....

Answer grams

Turn over for the next question



- 13** Here is a formula to convert degrees Kelvin to degrees Celsius.

$$C = K - 273$$

- 13 (a)** Work out C when $K = 240$

[1 mark]

.....

.....

Answer

- 13 (b)** Work out K when $C = -272$

[1 mark]

.....

.....

Answer

- 13 (c)** The formula that converts degrees Fahrenheit to degrees Celsius is

$$C = \frac{5}{9}(F - 32)$$

Which **one** of the following converts degrees Fahrenheit to degrees Kelvin?
Circle your answer.

[1 mark]

$$K = \frac{5}{9}(F - 305)$$

$$K = \frac{5}{9}(F - 242)$$

$$K = \frac{5}{9}(F - 32) + 273$$

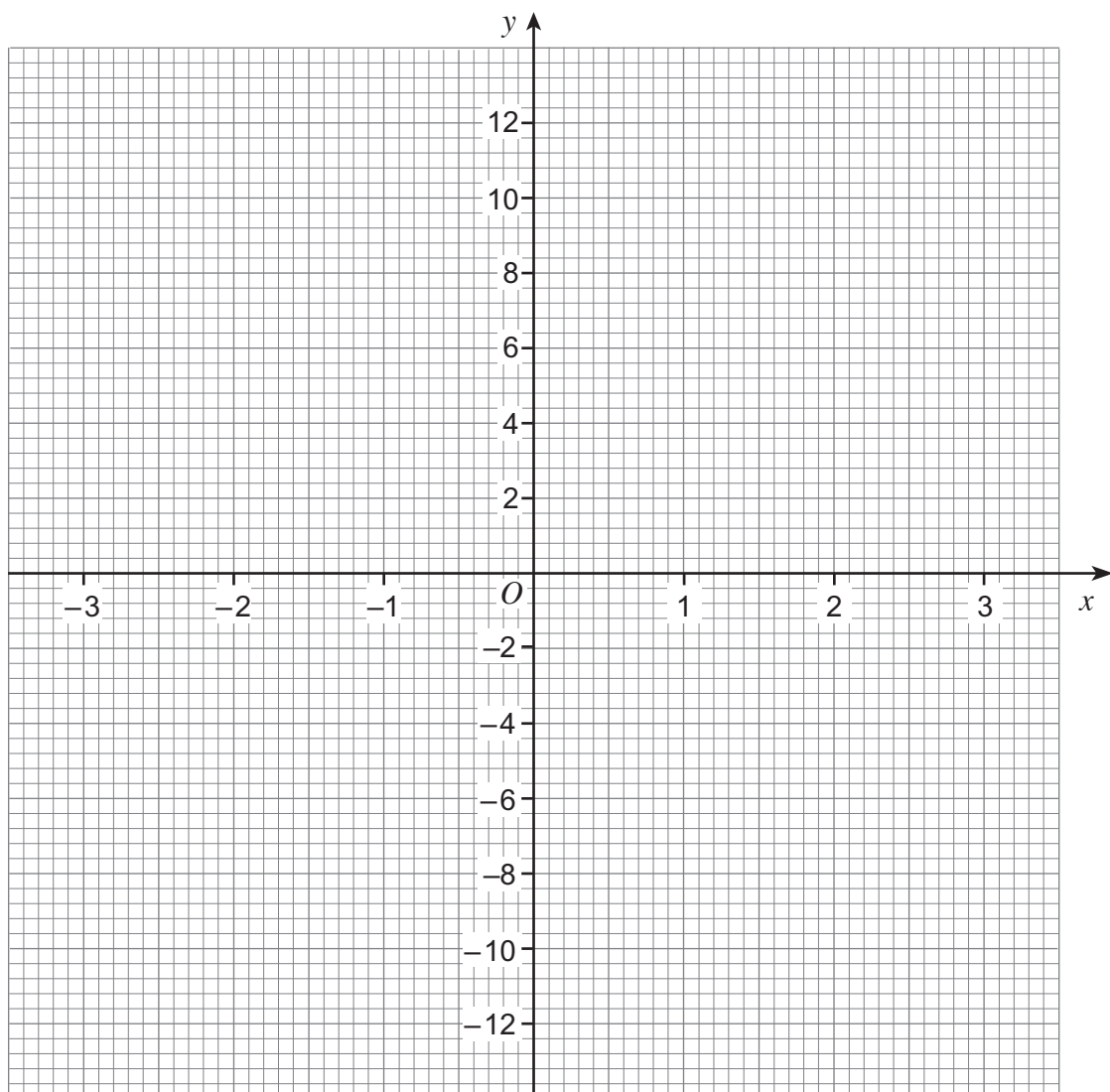
$$K = \frac{5}{9}(F - 32) - 273$$



14 Complete the table and draw the graph of $y = 3x - 2$ for values of x from -3 to 3

[3 marks]

x	-3	0	3
y		-2	



- 15 (a)** Which **one** of these is **not** a factor of $24xy$.
Circle your answer.

[1 mark]

3

 $4y$ $10xy$ $12x$

- 15 (b)** Work out the highest common factor (HCF) of 18 and 30

[2 marks]

.....

.....

Answer

- 16** These instructions are on a bottle of lawn feed.

‘Mix 200 millilitres of lawn feed with 10 litres of water.’

How many millilitres of lawn feed should be mixed with 3 gallons of water?
Use 1 gallon = 4.5 litres

[3 marks]

.....

.....

.....

.....

.....

.....

Answer millilitres



- 17** The table shows information about water used in a household.
The value for April is missing.

Month	Water used (m ³)
January	16.2
February	18.1
March	15.9
April	
May	17.8
June	21.0

The mean monthly water used for the six months is 18 m³

Work out the value for April.

[3 marks]

.....

.....

.....

.....

Answer m³

Turn over for the next question



18 (a) Simplify fully $3x + 4x - 2x$

[1 mark]

.....

.....

Answer

18 (b) Make w the subject of the formula $z = w + 3$

[1 mark]

.....

.....

Answer

18 (c) Factorise fully $4y^2 + 6y$

[2 marks]

.....

.....

Answer



- 19** Use approximations to estimate the value of

$$\frac{21.6 \times 98}{34 + 18.6}$$

[3 marks]

.....

.....

.....

.....

Answer

Turn over for the next question



- 20** The first buses to X and Y leave a bus station at 7 am
- Buses to X leave every 25 minutes.
- Buses to Y leave every 20 minutes.
- When will the buses to X and Y next leave at the same time?
- [3 marks]**

.....

.....

.....

.....

Answer

- 21** Six whole numbers have
- a median of 10
- a mode of 11
- a range of 4
- Work out a possible set of six numbers.
- Write the numbers in order.
- [3 marks]**

.....

.....

.....

.....

.....

.....

Answer , , , , ,



- 22** A fishing lake contains thousands of fish.
The fish are Carp, Bream or Roach.

10 fish are caught.
The table shows some of the results.

	Carp	Bream	Roach
Frequency	4		
Relative frequency		0.1	

- 22 (a)** Complete the table.

[3 marks]

- 22 (b)** The owner uses the results to estimate the proportion of Carp in the lake.

How can she make her estimate more reliable?

[1 mark]

.....

.....

END OF QUESTIONS



There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

