

Please write clearly in block capitals.

Centre number

Candidate number

Surname \_\_\_\_\_

Forename(s) \_\_\_\_\_

Candidate signature \_\_\_\_\_

I declare this is my own work.

# Functional Skills Level 2

## MATHEMATICS

### Paper 2 Calculator

Monday 13 January 2020

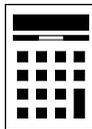
Afternoon

Time allowed: 1 hour 30 minutes

#### Materials

For this paper you must have:

- a calculator
- mathematical instruments.



#### Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- 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.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.
- State the units of your answer where appropriate.

For Examiner's Use	
Question	Mark
1–7	
8	
9	
10	
11	
12	
<b>TOTAL</b>	

#### Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142

#### Advice

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

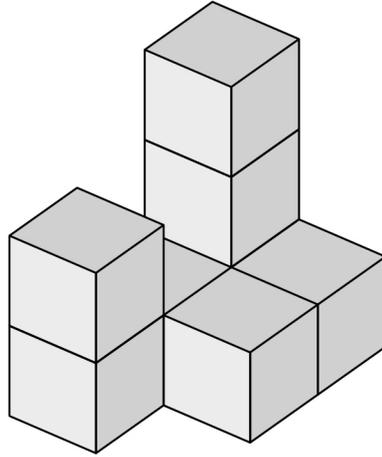


J A N 2 0 8 3 6 2 2 0 1

## Section A

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

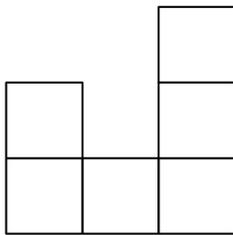
- 1 The diagram shows a 3-D shape.



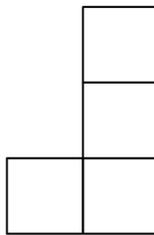
Which is the plan view of the shape?  
Circle the correct letter.

[1 mark]

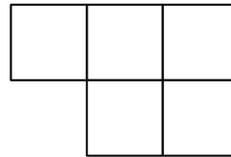
A



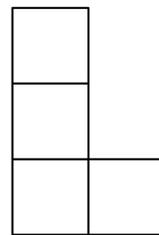
B



C

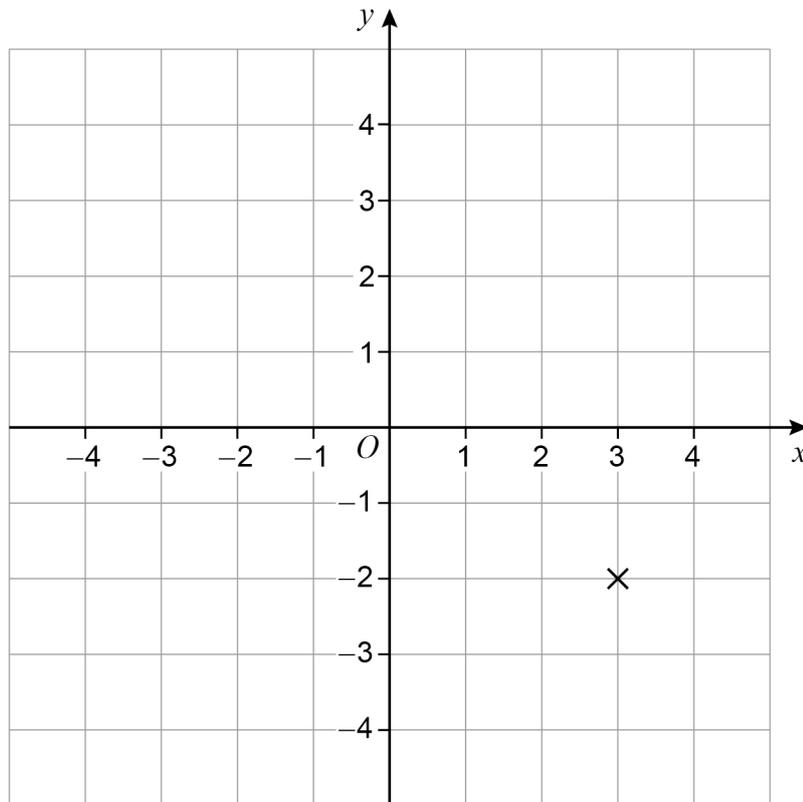


D



2 Write down the coordinates of the point marked X.

[1 mark]



Answer ( \_\_\_\_\_ , \_\_\_\_\_ )

3 Increase 1670 by 27%

[2 marks]

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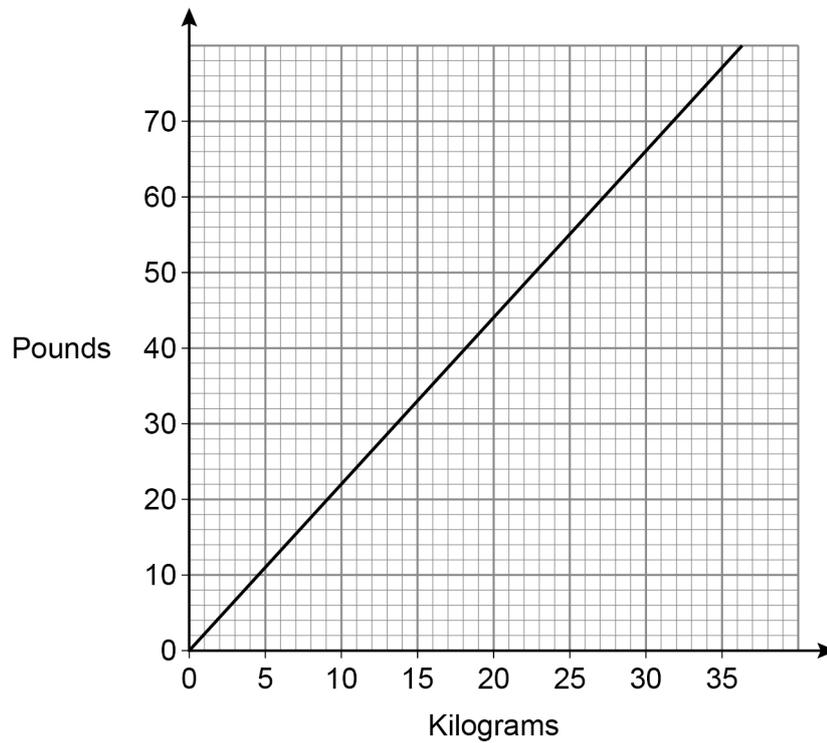
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Answer \_\_\_\_\_

Turn over ►



- 4 The graph can be used to convert between pounds and kilograms.



Use the graph to convert 40 pounds to kilograms.

**[2 marks]**

Answer \_\_\_\_\_ kilograms



5 Calculate  $1\frac{3}{4} + 2\frac{4}{5}$

[1 mark]

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Answer \_\_\_\_\_

6 Complete the table to show equivalent fractions, decimals and percentages.

[2 marks]

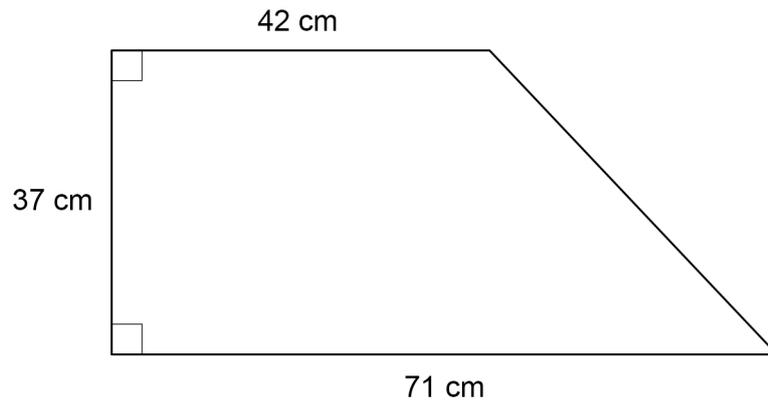
Fraction	Decimal	Percentage
$\frac{3}{8}$		37.5%
	0.15	15%

Turn over for the next question

Turn over ►



- 7 A shape is made from a rectangle and a triangle.



Not drawn  
accurately

Work out the area of the shape.

[3 marks]

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Answer \_\_\_\_\_  $\text{cm}^2$

12



**Section B**

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

**8 Fashion blogger**

Alex is a fashion blogger.

Companies pay her to promote their goods.

**8 (a)** Alex writes 30 posts promoting Company A.

The table shows the number of views of each post.

Number of views, $x$	Frequency		
$0 \leq x < 30\,000$	5		
$30\,000 \leq x < 60\,000$	9		
$60\,000 \leq x < 90\,000$	12		
$90\,000 \leq x < 120\,000$	4		
	Total = 30		

Alex also writes 23 posts promoting Company B.

The total number of views of these posts is 1 223 600

Which company receives the **higher** average number of views, A or B?

You **must** show your working.

**[4 marks]**

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Turn over ►



Some of the posts were about clothing and the rest were about shoes.

The table shows the number of each.

	Company A	Company B
Clothing	21	13
Shoes	9	10

One of the posts is chosen at random.

**8 (b)** Work out the probability that it is about clothing.

**[1 mark]**

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Answer \_\_\_\_\_

**8 (c)** Work out the probability that it is from Company A **and** is about shoes.

**[1 mark]**

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Answer \_\_\_\_\_



- 8 (d)** In a year, Alex wrote 1460 posts promoting companies.  
She was paid £75 for each post that had at least 65 000 views.  
In total, she was paid £36 000

What percentage of her posts had at least 65 000 views?

**[3 marks]**

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Answer \_\_\_\_\_ %

9

**Turn over for the next question**

**Turn over ►**



**9 Tinned food**

A company makes tinned food.

**9 (a)** A tin is filled with peas and water.



The contents of the tin have a total mass of 300 grams.

mass of peas : mass of water = 3 : 2

240 of these tins are packed into a box.

Work out the total mass of peas in the box.

Give your answer in kilograms.

**[5 marks]**

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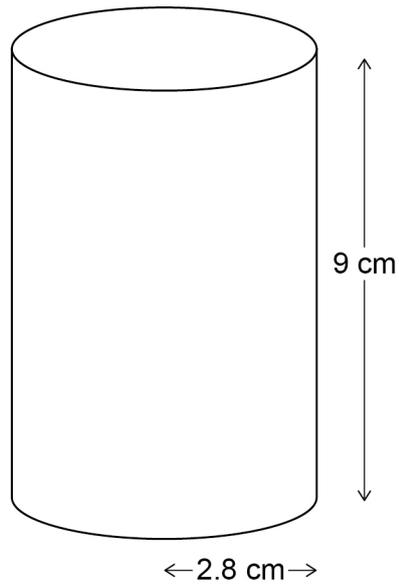
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Answer \_\_\_\_\_ kilograms



- 9 (b) A tin for carrots is a cylinder with radius 2.8 cm and height 9 cm



When filled, one sixth of the volume of the tin of carrots is water.  
The company uses 425 litres of water each day in tins of carrots.  
1 litre = 1000 cm<sup>3</sup>

How many tins of carrots does the company make each day?

[5 marks]

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Answer \_\_\_\_\_

10

Turn over ►



**10 University student**

Marco is about to start university.

The table shows his total expected income for the **year**.

	Amount (£)
<b>Student loan</b>	8700
<b>Part-time job</b>	4800

Marco budgets for the following expenses each **month** for 12 months.

	Amount per month (£)
<b>Accommodation</b>	589.00
<b>Living expenses</b>	186.00
<b>Entertainment</b>	65.00
<b>Travel</b>	87.50

**10 (a)** Marco will save any income that he does not spend.

How much does he expect to save in the **year**?

**[4 marks]**

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Answer £ \_\_\_\_\_



- 10 (b)** On Marco's 14th birthday, his parents put £2000 into a bank account for him.  
The account pays compound interest at a rate of 1.5% per annum.  
Marco can access the account on his 21st birthday.

How much will be in the account on his 21st birthday?

**[3 marks]**

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Answer £ \_\_\_\_\_

7

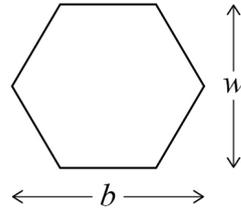
**Turn over for the next question**

**Turn over ►**



**11 Jewellery**

- 11 (a)** Mo makes and sells jewellery.  
He makes pendants in the shape of hexagons.  
The hexagons are made of glass and have wire around the perimeter.



Not drawn  
accurately

Here is a formula for the perimeter,  $P$ , of the hexagon.

$$P = 6 \times \sqrt{\left(\frac{b}{4}\right)^2 + \left(\frac{w}{2}\right)^2}$$

$b$  is the length of the pendant

$w$  is the width of the pendant

Mo makes pendants with length 6.4 cm and width 5.5 cm

He buys the wire in reels with 4 metres of wire on each reel.

How many pendants can Mo make using one reel of wire?

You **must** show your working.

**[5 marks]**

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Answer \_\_\_\_\_



**11 (b)** Mo makes some pendants.

The glass in each pendant is red, blue or yellow.

$\frac{2}{11}$  of the pendants are red

blue pendants and yellow pendants are in the ratio 2 : 1

What fraction of the pendants are blue?

**[4 marks]**

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Answer \_\_\_\_\_

9

**Turn over for the next question**

**Turn over ►**





- 12 (b)** Steph works out the cost of her trip, including the return journey.  
She will use her car to drive 108 miles **each way**.  
She and her 3 friends will share the cost of fuel equally.  
Her car travels 12.5 miles per litre of fuel.  
Fuel costs 128.8p per litre.

Steph will also pay  
£3 for a return train ticket  
£30 for a match ticket  
£8 for food.

Work out the total amount Steph will pay for her trip.

**[6 marks]**

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Answer £ \_\_\_\_\_

**Question 12 continues on the next page**

**Turn over ►**





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2 4



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