

Name: _____

Edexcel GCSE

Mathematics A

Paper 2 (Calculator) 1st 4 Pages

Higher Tier

Paper Reference

1MA0/2H

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise. |



Paper	Mark	Grade	
June 2009			
November 2009			
June 2010			
November 2010			
June 2011			
November 2011			
March 2012			
June 2012			
November 2012			
March 2013			
June 2013			
November 2013			

Paper	Topics I need to work on

What have I done about it?	

Paper	Topics I need to work on

What have I done about it?	

JUNE 2009

1. Tania went to Italy.
She changed £325 into euros (€).

The exchange rate was £1 = €1.68

- (a) Change £325 into euros (€).

€
(2)

When she came home she changed €117 into pounds.

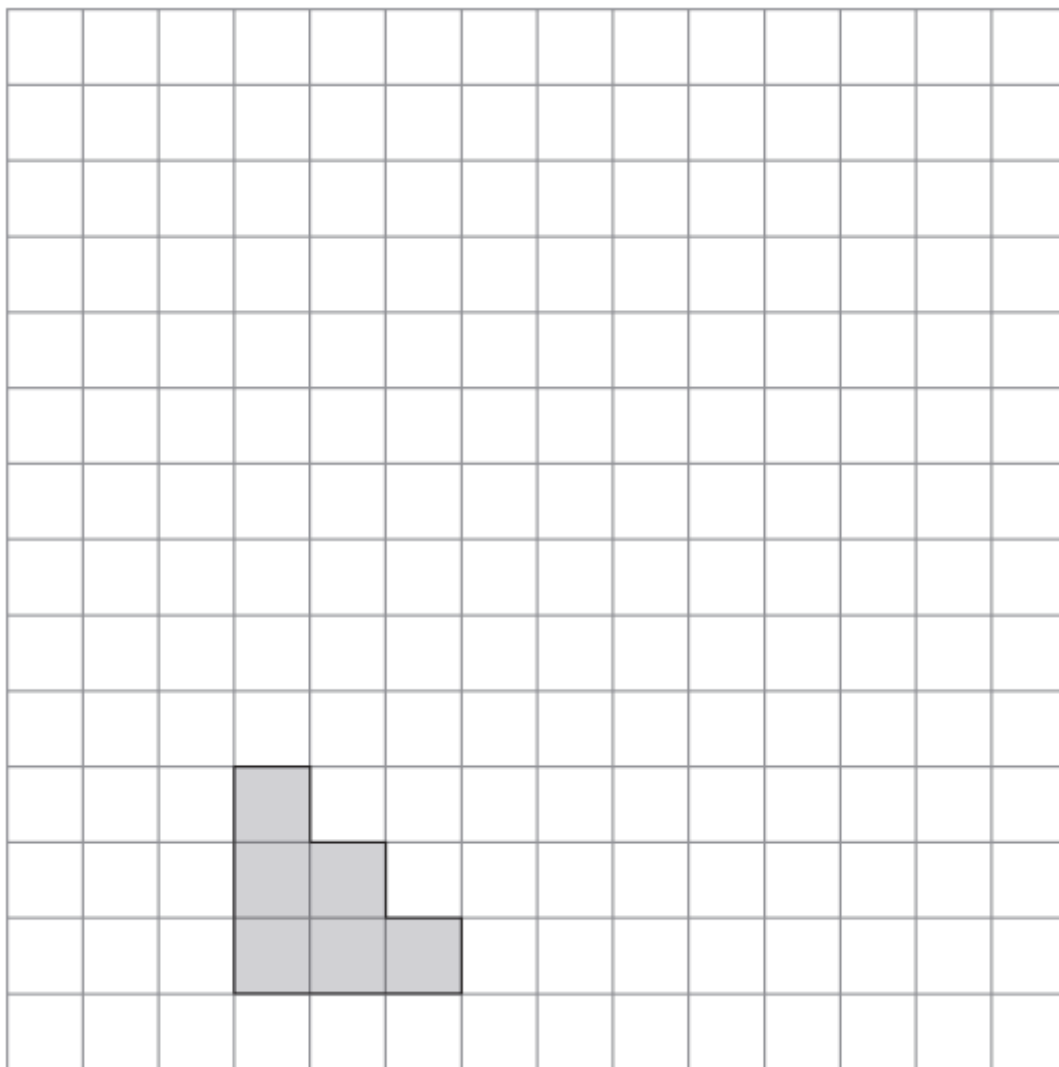
The new exchange rate was £1 = €1.50

- (b) Change €117 into pounds.

£
(2)

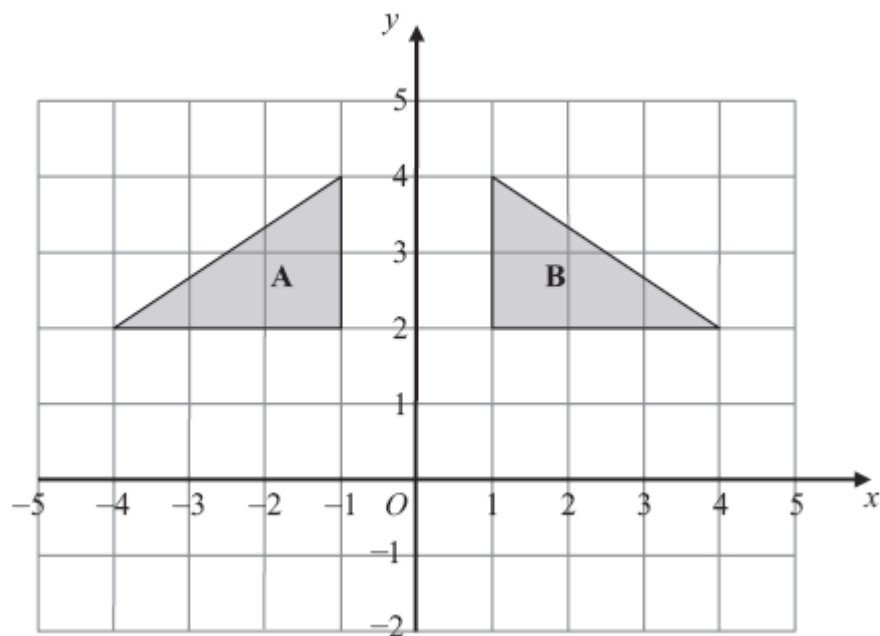
(Total 4 marks)

2.



(a) On the grid, draw an enlargement, scale factor 2, of the shaded shape.

(2)



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

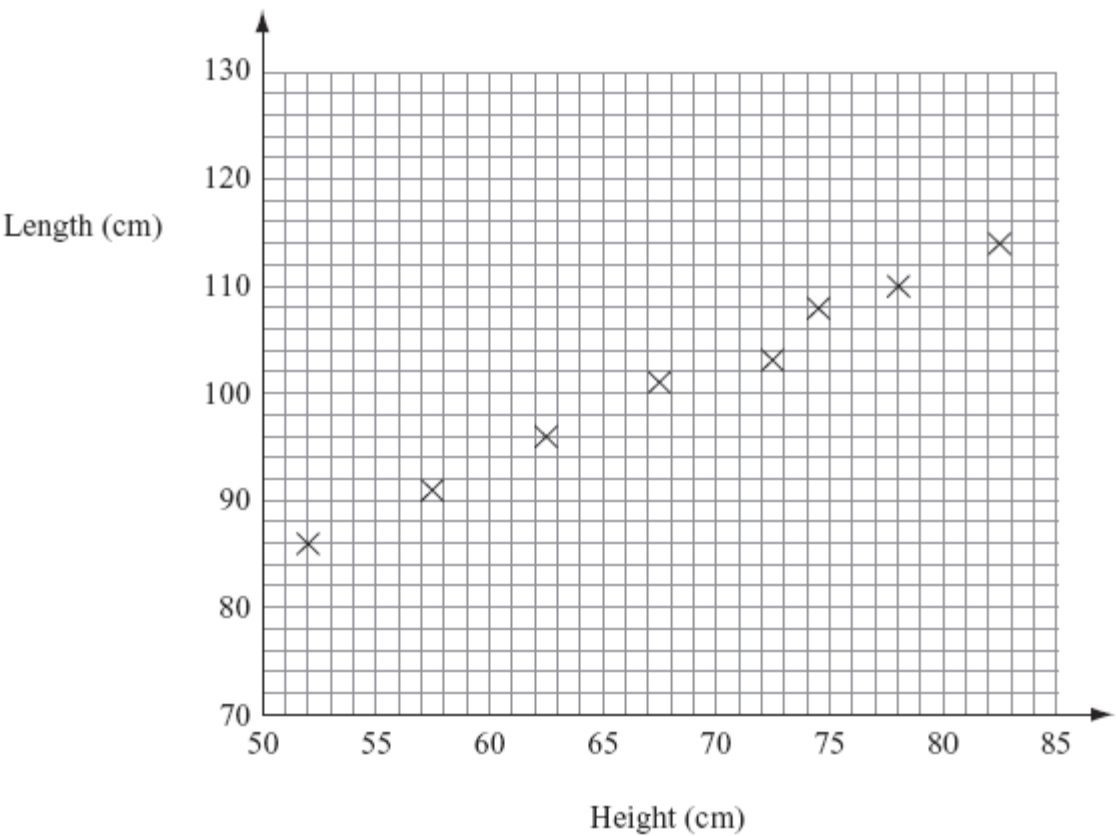
.....
(2)

(Total 4 marks)

3. The n th term of a number sequence is $n^2 + 1$
Write down the first three terms of the sequence.

.....
(Total 2 marks)

4. The scatter graph shows information about eight sheep.
It shows the height and the length of each sheep.



The table gives the height and the length of two more sheep.

Height (cm)	65	80
Length (cm)	100	110

- (a) On the scatter graph, plot the information from the table. (1)
- (b) Describe the relationship between the height and the length of these sheep.
- (1)

The height of a sheep is 76 cm.

- (c) Estimate the length of this sheep.
-cm (2)

(Total 4 marks)

NOVEMBER 2009

1. Ali asked 200 students which sport they like best.
They could choose swimming or tennis or athletics.

The two-way table shows some information about their answers.

	Swimming	Tennis	Athletics	Total
Female			19	
Male	36	42		
Total	79		54	200

Complete the two-way table.

Q1

(Total 3 marks)

2. (a) Use your calculator to work out the value of $\frac{8.7 \times 12.3}{9.5 - 5.73}$
Write down all the digits from your calculator.
Give your answer as a decimal.

.....
(2)

- (b) Write your answer to part (a) correct to 1 significant figure.

.....
(1)

(Total 3 marks)

Q2



3. (a) $p = 2$
 $q = -4$

Work out the value of $3p + 5q$

.....
(2)

(b) Factorise $3m - 6$

.....
(1)

(Total 3 marks)

Q3

4. Frank did a survey on the areas of pictures in a magazine.

The magazine had 60 pages.
Frank worked out the area of each of the pictures in the first 2 pages.

This may not be a good method to do the survey.
Explain why.

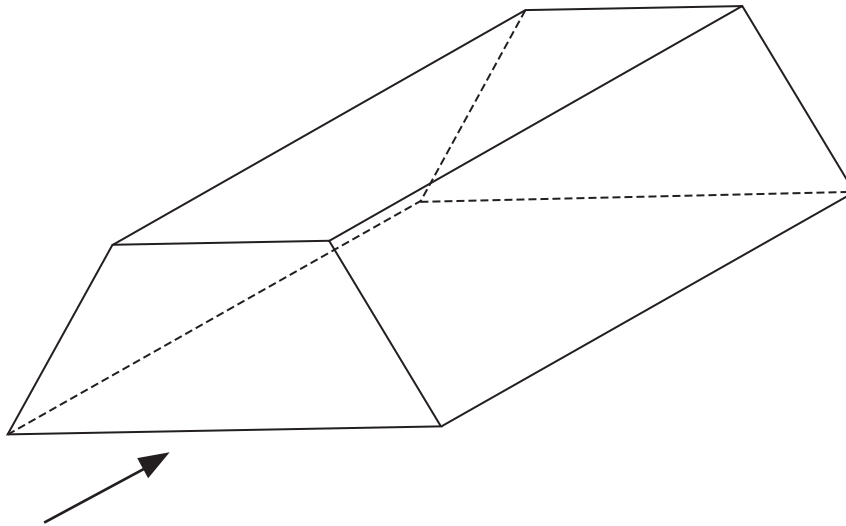
.....
.....

(Total 1 mark)

Q4



5.



The diagram shows a prism.

- (a) On the diagram, draw in **one** plane of symmetry for the prism. (2)
- (b) In the space below, sketch the front elevation from the direction marked with an arrow.

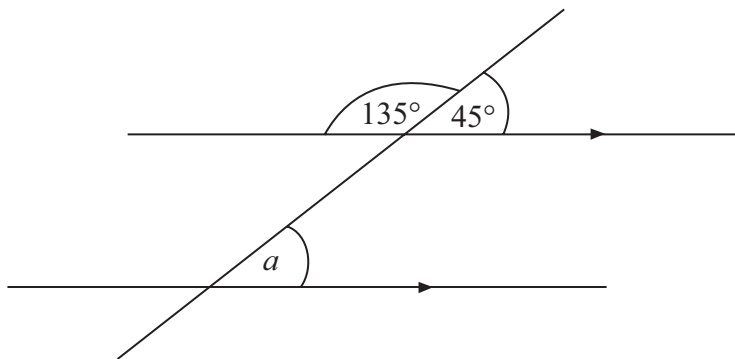
(2) Q5

(Total 4 marks)



6.

Diagram **NOT**
accurately drawn



- (i) Write down the size of the angle marked a .

..... °

- (ii) Give a reason for your answer.

.....

Q6

(Total 2 marks)

7. A circle has a radius of 5 cm.

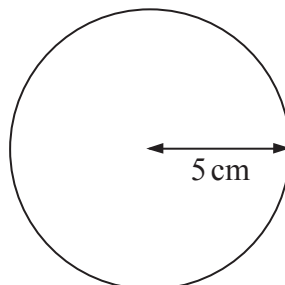


Diagram **NOT**
accurately drawn

Work out the area of the circle.
Give your answer correct to 3 significant figures.

..... cm^2

Q7

(Total 2 marks)



JUNE 2010

1. Here is a list of ingredients for making a trifle for 4 people.

Trifle for 4 people

120 g of raspberry jelly
8 sponge fingers
420 ml of custard
180 g of tinned fruit

Rob is going to make a trifle for 6 people.
Work out the amount of each ingredient he needs.

..... g of raspberry jelly

..... sponge fingers

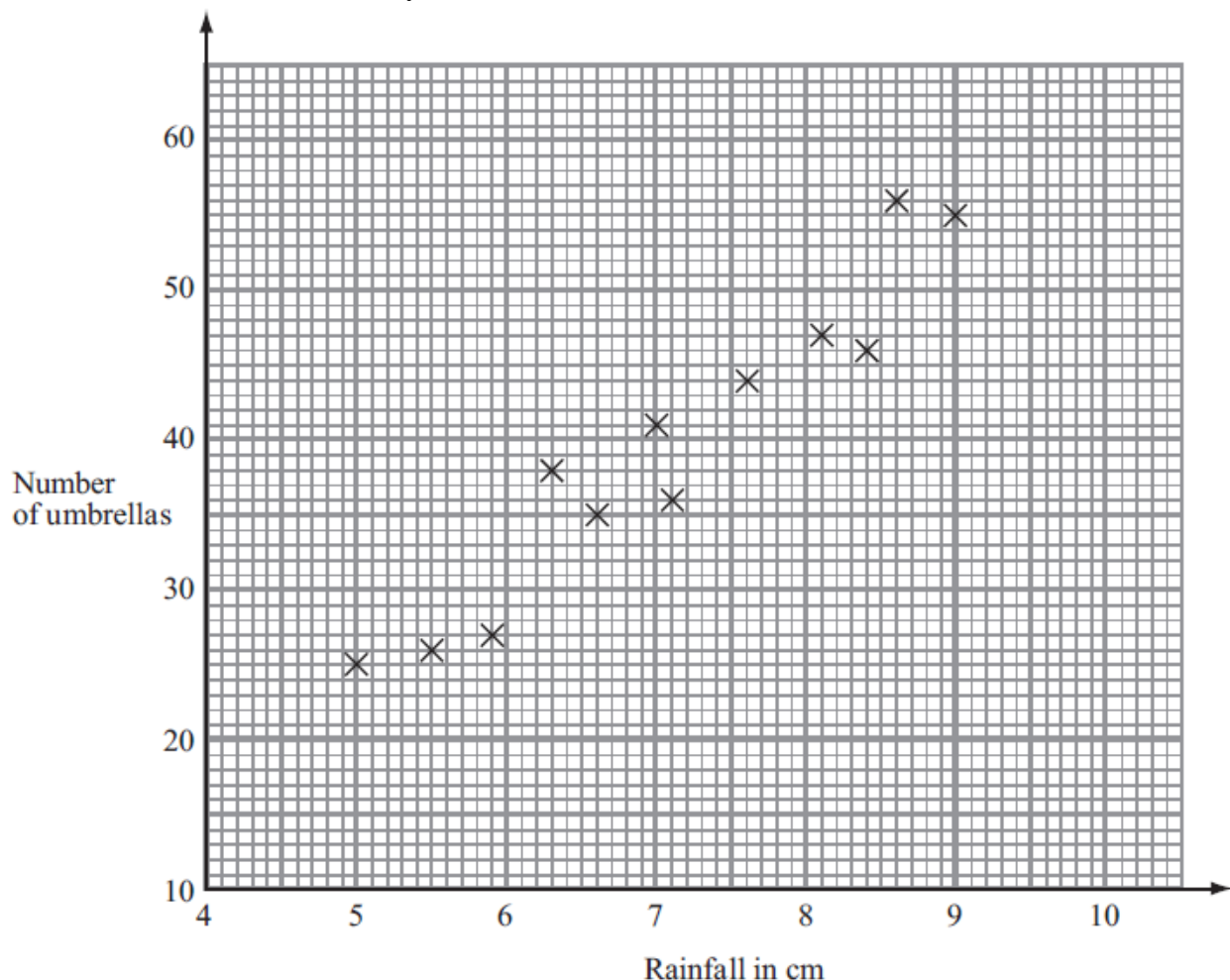
..... ml of custard

..... g of tinned fruit

(Total 3 marks)

2. Mr Wither sells umbrellas.

The scatter graph shows some information about the number of umbrellas he sold and the rainfall, in cm, each month last year.



In January of this year, the rainfall was 6.1 cm.
During January, Mr Wither sold 32 umbrellas.

- (a) Show this information on the scatter graph.

(1)

- (b) What type of correlation does this scatter graph show?

.....
(1)

In February of this year, Mr Wither sold 40 umbrellas.

- (c) Estimate the rainfall for February.

..... cm
(2)

(Total 4 marks)

3. In August 2008, Eddie hired a car in Italy.

The cost of hiring the car was £620

The exchange rate was £1 = €1.25

- (a) Work out the cost of hiring the car in euros (€).

€
(2)

Eddie bought some perfume in Italy.

The cost of the perfume in Italy was €50

The cost of the same perfume in London was £42

The exchange rate was still £1 = €1.25

- (b) Work out the difference between the cost of the perfume in Italy and the cost of the perfume in London.
Give your answer in pounds (£).

£
(3)

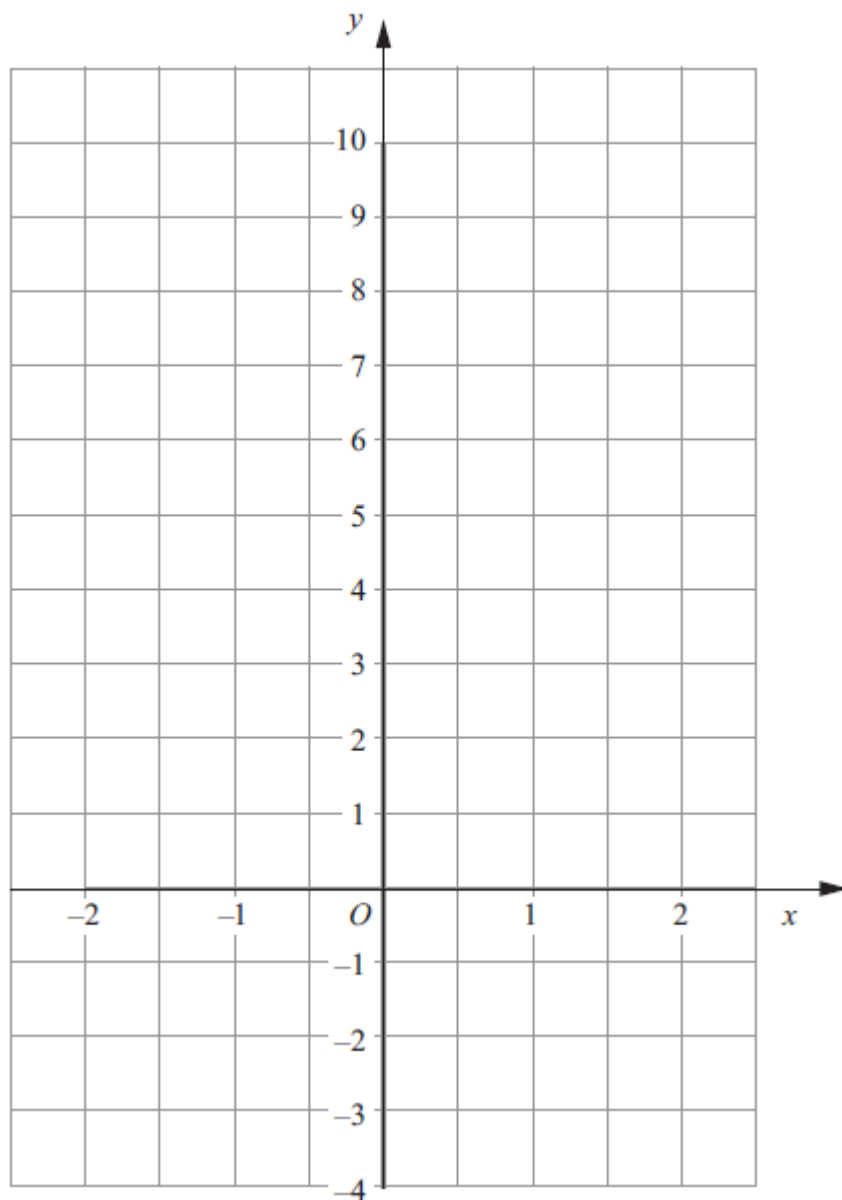
(Total 5 marks)

4. (a) Complete the table of values for $y = 3x + 4$

x	-2	-1	0	1	2
y		1			10

(2)

- (b) On the grid, draw the graph of $y = 3x + 4$



(2)

(Total 4 marks)

NOVEMBER 2010

1.

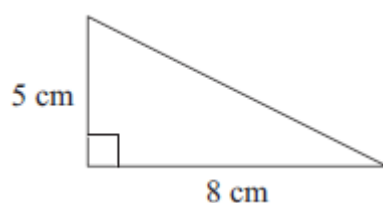


Diagram **NOT**
accurately drawn

Work out the area of this right-angled triangle.

..... cm²

(Total 2 marks)

2.

A spinner can land on red or blue or pink.

The table shows the probabilities that the spinner will land on red or on blue.

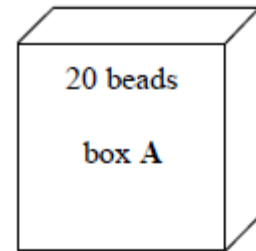
Colour	red	blue	pink
Probability	0.58	0.30	

Work out the probability that the spinner will land on pink.

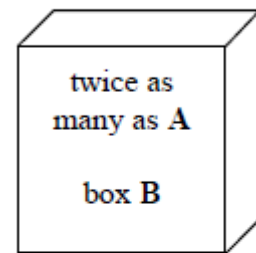
.....

(Total 2 marks)

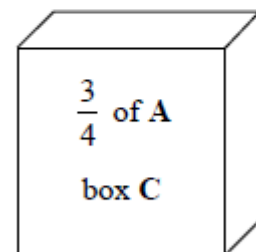
3. There are 20 beads in box **A**.



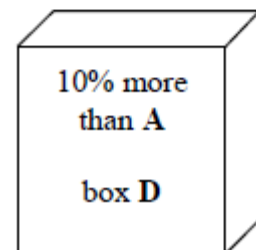
In box **B** there are twice as many beads as in box **A**.



In box **C** there are $\frac{3}{4}$ of the number of beads as in box **A**.



In box **D** there are 10% **more** beads than in box **A**.



Work out the **total** number of beads in the four boxes.

..... beads

(Total 4 marks)

4. Here is a list of ingredients to make melon sorbet for **6** people.

Melon Sorbet	
for 6 people	
800 g	melon
4	egg whites
$\frac{1}{2}$	lime
100 g	caster sugar

Terry makes melon sorbet for 18 people.

- (a) Work out how much caster sugar he uses.

..... g
(2)

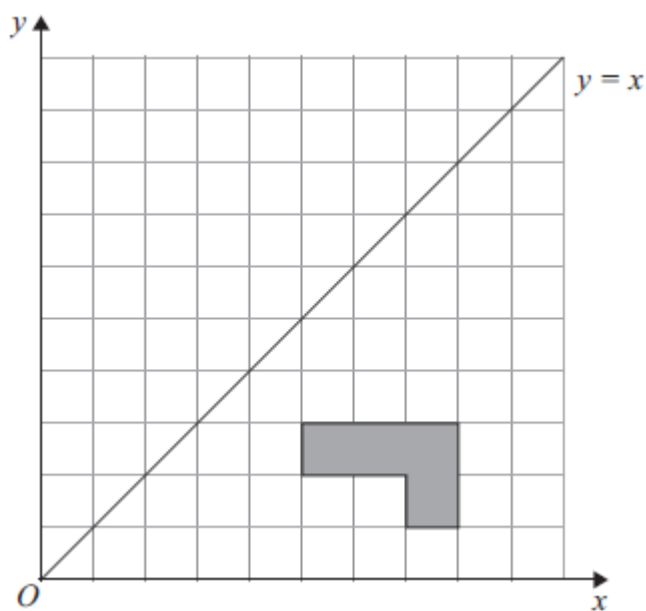
Hedley makes melon sorbet.
He uses 2 limes.

- (b) Work out how many people he makes melon sorbet for.

.....
(2)

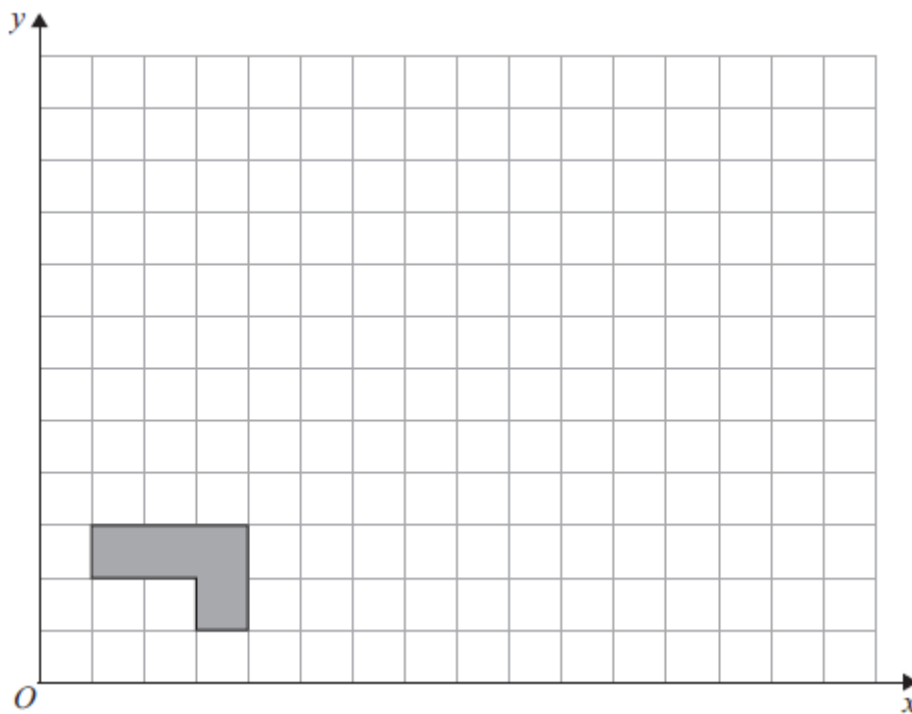
(Total 4 marks)

5.



(a) Reflect the shaded shape in the line $y = x$.

(2)



(b) On the grid, enlarge the shaded shape by a scale factor of 3, centre O .

(3)

(Total 5 marks)

JUNE 2011

1. Each student at a college studies one of four languages.

The table shows the probability a student chosen at random studies German or Russian or French.

Language	German	Spanish	Russian	French
Probability	0.2		0.1	0.5

A student is chosen at random.

- (a) Work out the probability that the student studies Spanish.

.....
(2)

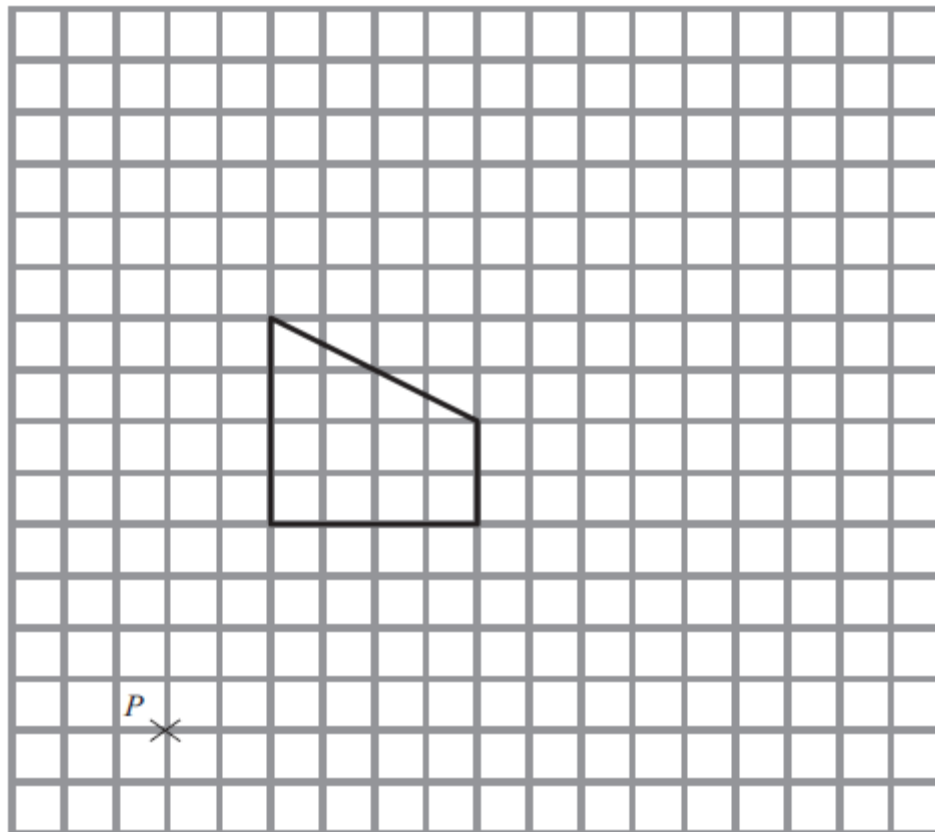
There are 800 students at the college.

- (b) Work out the number of students who study German.

.....
(2)

(Total 4 marks)

2.



On the grid, enlarge the shape with a scale factor of $\frac{1}{2}$, centre P .

(Total 3 marks)

3. (a) Express 45 as a product of its prime factors.

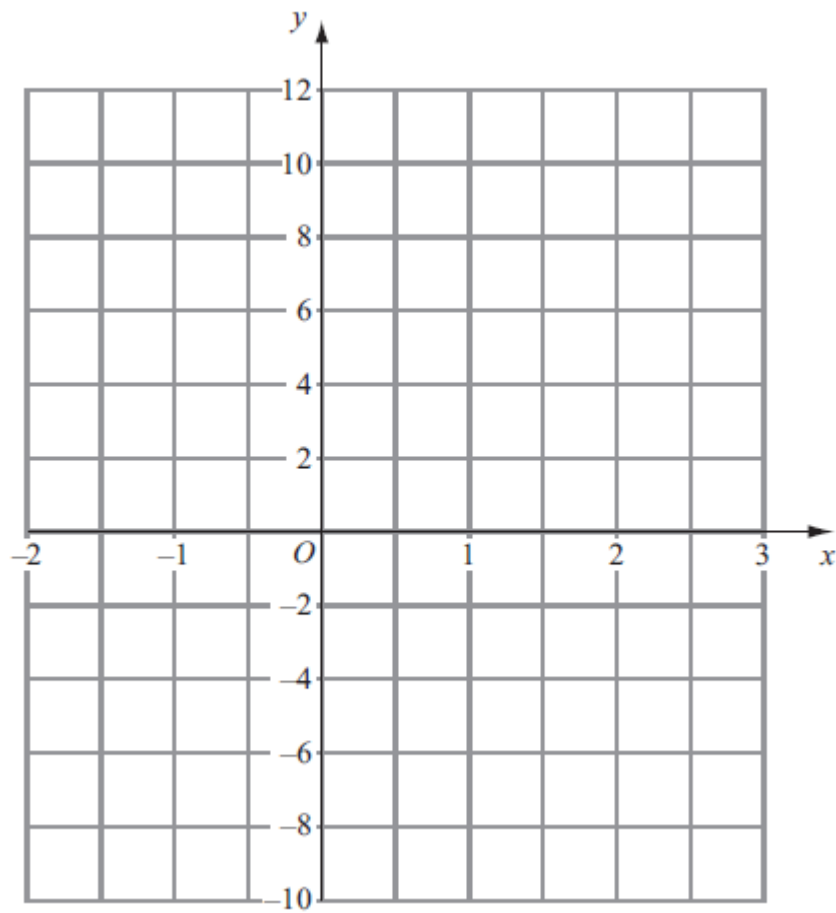
.....
(2)

- (b) Find the Highest Common Factor (HCF) of 45 and 30

.....
(2)

(Total 4 marks)

4. On the grid, draw the graph of $y = 4x - 2$



(Total 3 marks)

5. The diagram shows a circular pond with a path around it.

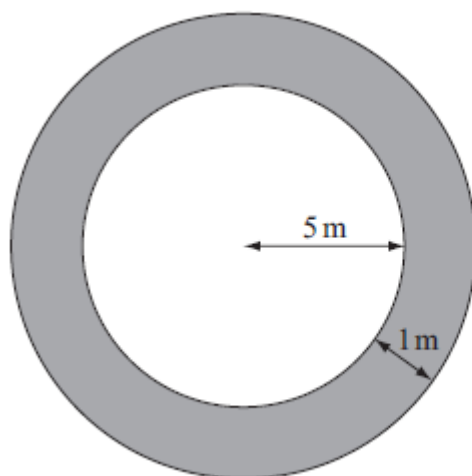


Diagram **NOT**
accurately drawn

The pond has a radius of 5m.

The path has a width of 1m.

Work out the area of the path.

Give your answer correct to 3 significant figures.

..... m²

(Total 3 marks)

NOVEMBER 2011

1. (a) Use your calculator to work out

$$\frac{\sqrt{21.5}}{5.8 - 2.36}$$

Write down all the figures on your calculator display.

.....
(2)

- (b) Write down your answer to part (a) correct to 2 decimal places.

.....
(1)

(Total 3 marks)

Q1

2. Ishmal invested £3500 for 3 years at 2.5% per annum **simple interest**.

Work out the total amount of interest Ishmal earned.

£

(Total 3 marks)

Q2



3. Gary wants to find out how much time teenagers spend listening to music.

He uses this question on a questionnaire.

How many hours do you spend listening to music?			
<div style="border: 1px solid black; width: 60px; height: 30px;"></div>	<div style="border: 1px solid black; width: 60px; height: 30px;"></div>	<div style="border: 1px solid black; width: 60px; height: 30px;"></div>	<div style="border: 1px solid black; width: 60px; height: 30px;"></div>
1 to 5	5 to 10	10 to 20	over 20

- (a) Write down **two** things wrong with this question.

1

.....

2

.....

(2)

- (b) Design a better question for Gary's questionnaire to find out how much time teenagers spend listening to music.

(2)

Q3

(Total 4 marks)



4. (a) Find the highest common factor (HCF) of 24 and 30

.....
(1)

(b) Find the lowest common multiple (LCM) of 4, 5 and 6

.....
(2)

(Total 3 marks)

Q4

5. Melissa is 13 years old.
Becky is 12 years old.
Daniel is 10 years old.

Melissa, Becky and Daniel share £28 in the ratio of their ages.
Becky gives a third of her share to her mother.

How much should Becky now have?

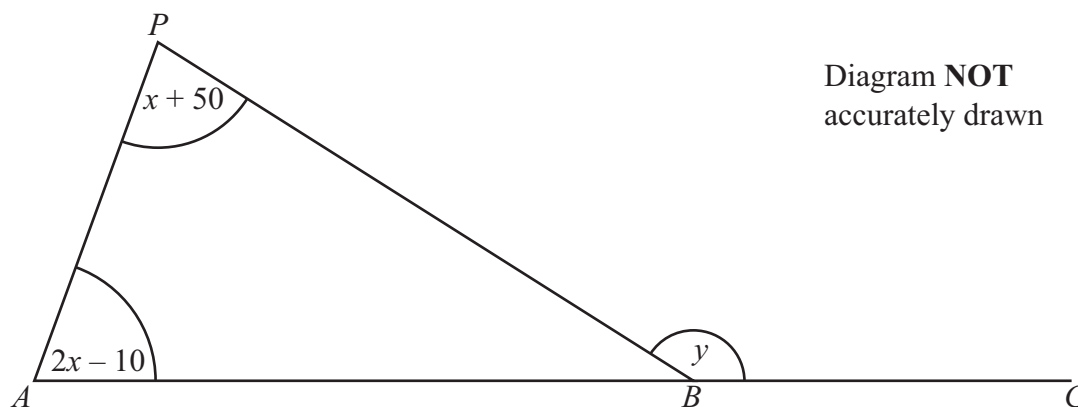
£

(Total 4 marks)

Q5



6.



All angles are measured in degrees.

ABC is a straight line.

Angle $APB = x + 50$

Angle $PAB = 2x - 10$

Angle $PBC = y$

- (a) Show that $y = 3x + 40$
Give reasons for each stage of your working.

(3)

- (b) Given that $y = 145$,

- (i) work out the value of x ,

$x = \dots\dots\dots$

- (ii) work out the size of the largest angle in triangle ABP .

$\dots\dots\dots^\circ$

(4)

Q6

(Total 7 marks)



MARCH 2012

1. Here are the first five terms in a number sequence.

5 9 13 17 21

Find the 10th term in this number sequence.

Q1

.....
(Total 2 marks)

2. A rugby team played six games.
The mean score for the six games is 14.5

The rugby team played one more game.
The mean score for all seven games is 16

Work out the number of points the team scored in the seventh game.

Q2

..... points
(Total 2 marks)



3. Rosie and Jim are going on holiday to the USA.

Jim changes £350 into dollars (\$).

The exchange rate is £1 = \$1.34

- (a) Work out how many dollars (\$) Jim gets.

\$
(2)

In the USA Rosie sees some jeans costing \$67

In London the same make of jeans costs £47.50

The exchange rate is still £1 = \$1.34



- (b) Work out the difference between the cost of the jeans in the USA and in London.
Give your answer in pounds (£).

£
(3)

(Total 5 marks)

Q3



4. John needs 4 tyres for his car.

He pays for 3 tyres and gets one tyre free.
The tyres cost £65 each plus VAT at 20%.

Work out how much in total John pays for the tyres.

Offer of the week
4 for the price of 3



£65 each plus VAT

£

(Total 4 marks)

Q4

5. (a) Use your calculator to work out $\frac{\sqrt{2.5^2 + 3.75}}{3.9 - 1.7}$

Write down all the figures on your calculator display.
You must give your answer as a decimal.

.....
(3)

- (b) Write your answer to part (a) correct to 2 decimal places.

.....
(1)

(Total 4 marks)

Q5



6. The equation $x^3 + 3x = 41$

has a solution between 3 and 4

Use a trial and improvement method to find this solution.
Give your answer correct to one decimal place.
You must show **all** your working.

$x = \dots\dots\dots$

(Total 4 marks)

Q6



JUNE 2012

1

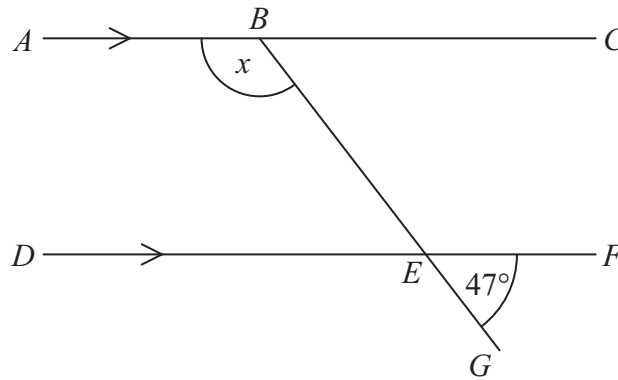


Diagram **NOT**
accurately drawn

ABC and DEF are parallel lines.
 BEG is a straight line.
Angle $GEF = 47^\circ$.

Work out the size of the angle marked x .
Give reasons for your answer.

(Total for Question 1 is 3 marks)



P 4 0 6 4 7 A 0 3 2 4

- 2 (a) Use your calculator to work out $\frac{38.5 \times 14.2}{18.4 - 5.9}$

Write down all the figures on your calculator display.
You must give your answer as a decimal.

.....
(2)

- (b) Write your answer to part (a) correct to 1 significant figure.

.....
(1)

(Total for Question 2 is 3 marks)



3 Pradeep wants to find out how much time people spend playing sport.

He uses this question on a questionnaire.

How much time do you spend playing sport?

☐

0 – 1 hours

☐

1 – 2 hours

☐

3 – 4 hours

(a) Write down **two** things wrong with this question.

1

.....

2

.....

(2)

(b) Design a better question for Pradeep's questionnaire to find out how much time people spend playing sport.

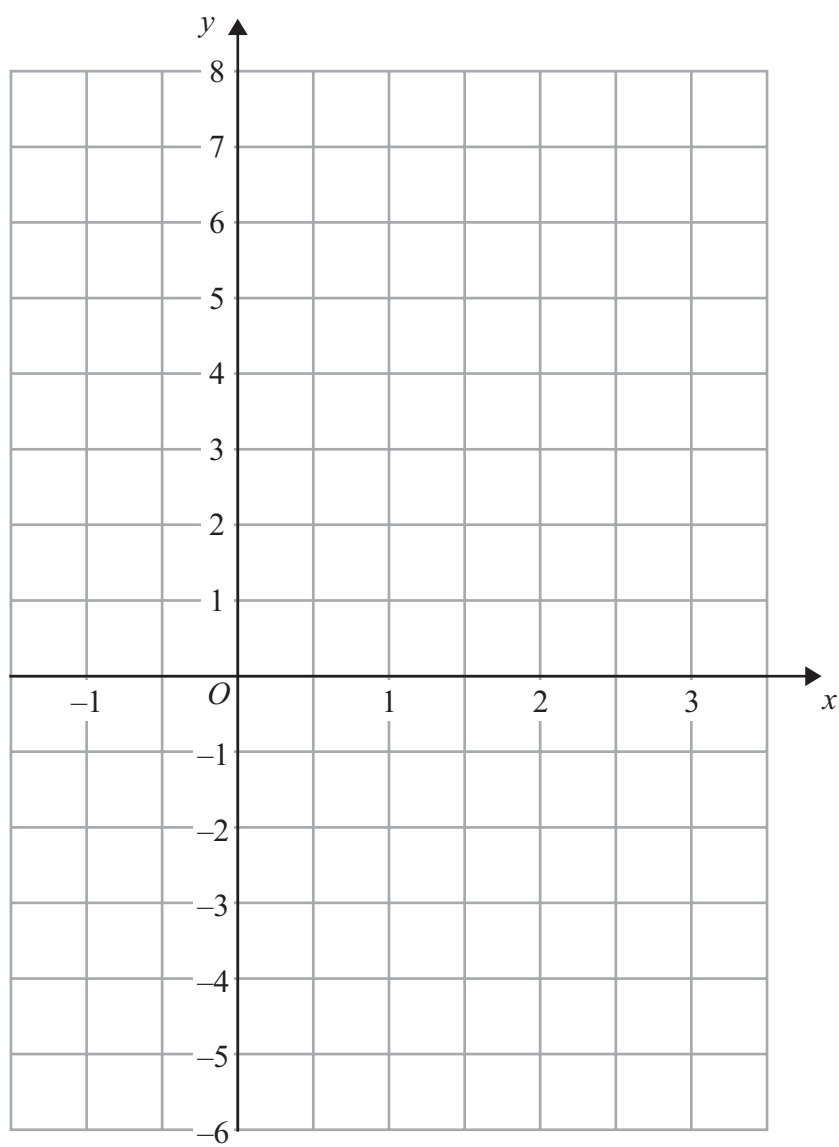
(2)

(Total for Question 3 is 4 marks)



P 4 0 6 4 7 A 0 5 2 4

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



(Total for Question 4 is 3 marks)



NOVEMBER 2012

- 1 Use a calculator to work out

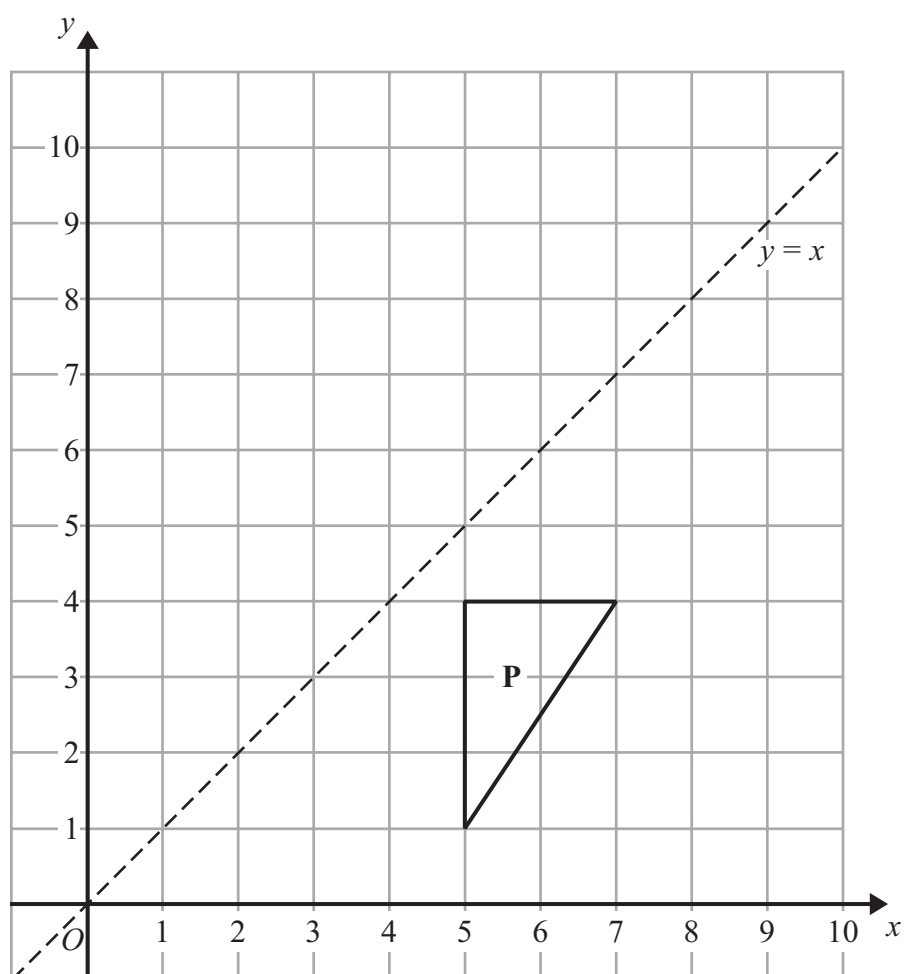
$$\frac{\sqrt{20.4}}{6.2 \times 0.48}$$

Write down all the figures on your calculator display.
Give your answer as a decimal.

.....
(Total for Question 1 is 2 marks)



2 (a)

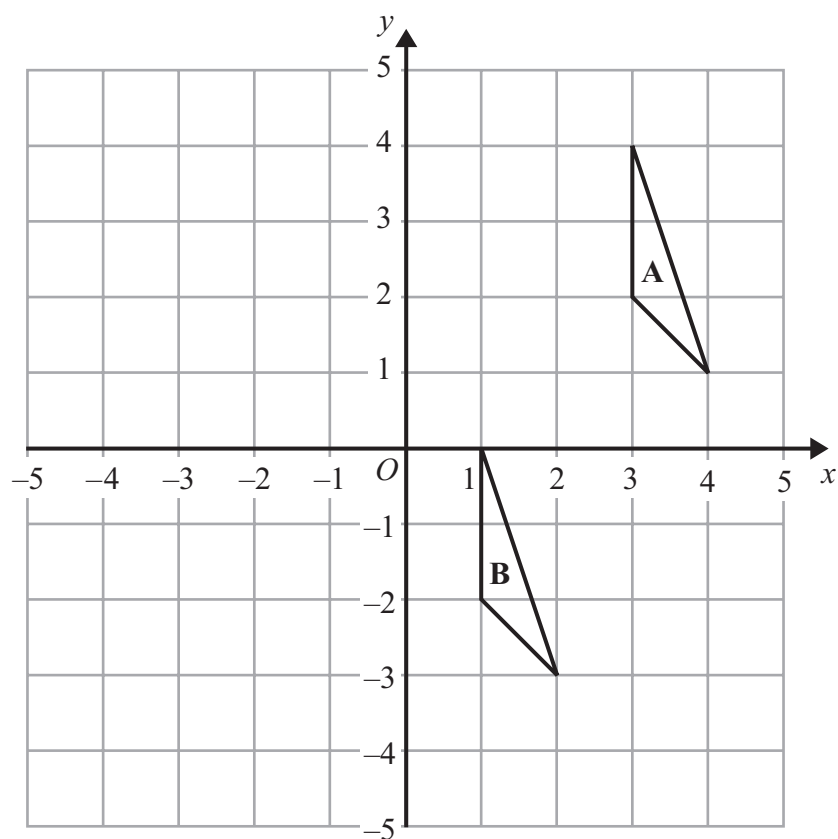


Reflect shape **P** in the line $y = x$

(2)



(b)



Describe fully the single transformation that maps triangle A onto triangle B.

(2)

(Total for Question 2 is 4 marks)



- *3** A company sells boxes to factories.
Fred buys boxes.
The boxes are sold in packs of 1000
Each pack costs £193.86
- Fred orders 3 packs of boxes.
He gets a discount on his total order.
- The table shows the discount he will get.

Total Order	Discount
£100 - £300	5%
£301 - £400	10%
£401 and above	15%

Work out the total cost of the order after the discount.
You must show your working.

(Total for Question 3 is 5 marks)



MARCH 2013

- 1 Here are the ages, in years, of 15 students.

19 18 20 25 37

33 21 17 29 20

42 18 23 37 22

Show this information in an ordered stem and leaf diagram.

Key:

(Total for Question 1 is 3 marks)



***2** 225 grams of flour are needed to make 9 cakes.

Marian wants to make 20 of these cakes.

She has 475 grams of flour.

Does Marian have enough flour to make 20 cakes?

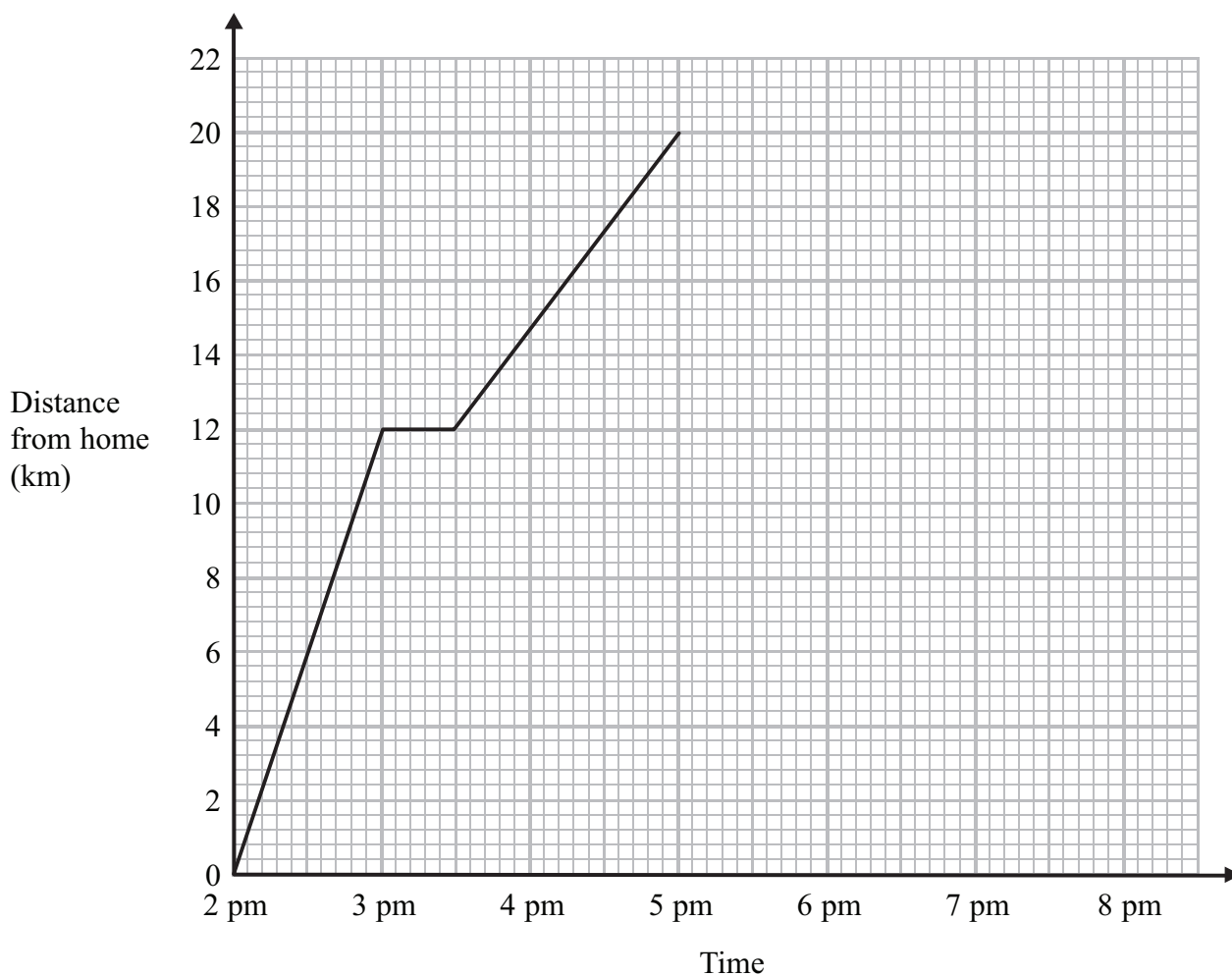
You must show all your working.

(Total for Question 2 is 3 marks)



- 3 Simon went for a cycle ride.
He left home at 2 pm.

The travel graph represents part of Simon's cycle ride.



At 3 pm Simon stopped for a rest.

- (a) How many minutes did he rest?

..... minutes
(1)

- (b) How far was Simon from home at 5 pm?

..... km
(1)

At 5 pm Simon stopped for 30 minutes.
Then he cycled home at a steady speed.
It took him 1 hour 30 minutes to get home.

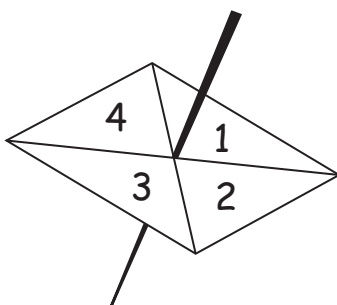
- (c) Complete the travel graph.

(2)

(Total for Question 3 is 4 marks)



- 4 Here is a four sided spinner.
The spinner is biased.



The table shows the probabilities that the spinner will land on 1 or on 3

Number	1	2	3	4
Probability	0.2		0.1	

The probability that the spinner will land on 2 is the same as the probability that the spinner will land on 4

- (a) Work out the probability that the spinner will land on 4

.....
(3)

Shunya is going to spin the spinner 200 times.

- (b) Work out an estimate for the number of times the spinner will land on 3

.....
(2)

(Total for Question 4 is 5 marks)



JUNE 2013

- 1 Here is a cuboid.

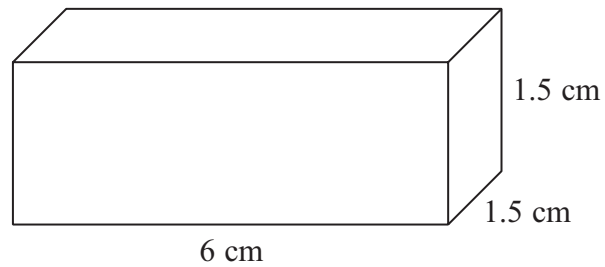


Diagram **NOT**
accurately drawn

The cuboid is 6 cm by 1.5 cm by 1.5 cm.

Work out the total surface area of the cuboid.

..... cm²

(Total for Question 1 is 3 marks)



***2** Here is a list of ingredients for making 18 mince pies.

Ingredients for 18 mince pies

225 g of butter
350 g of flour
100 g of sugar
280 g of mincemeat
1 egg

Elaine wants to make 45 mince pies.

Elaine has

1 kg of butter
1 kg of flour
500 g of sugar
600 g of mincemeat
6 eggs

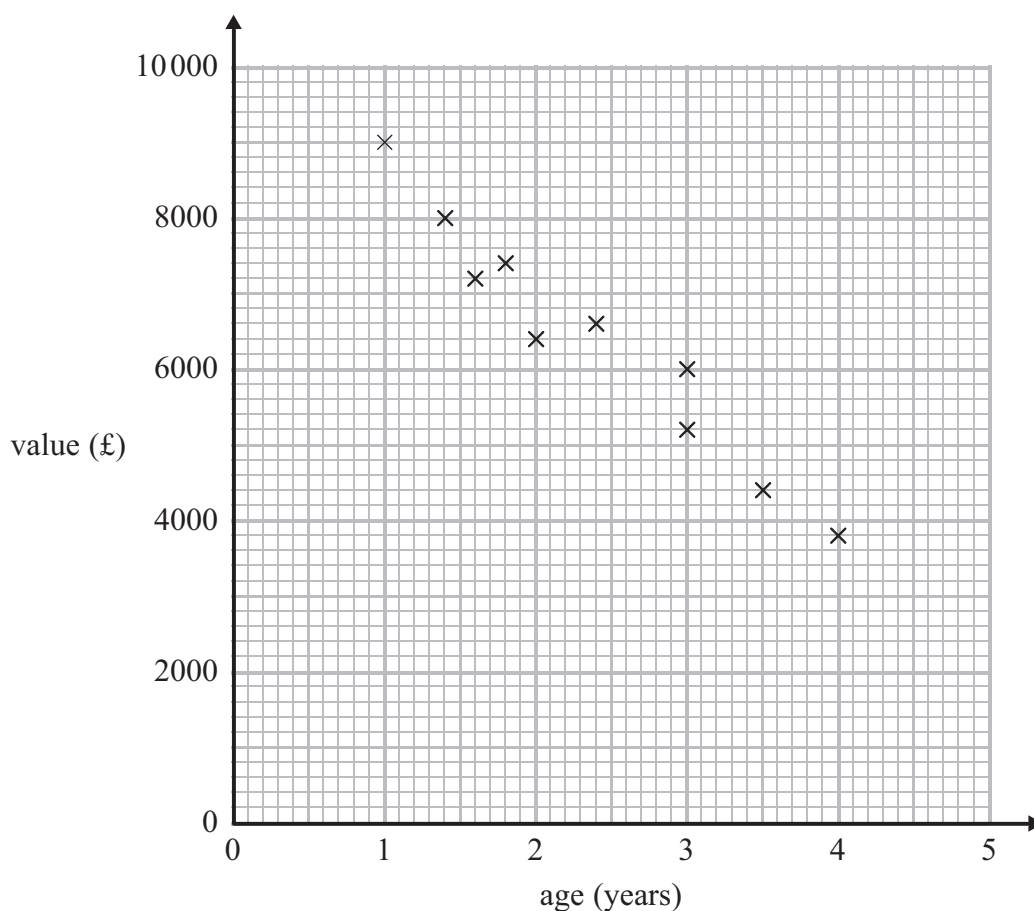
Does Elaine have enough of each ingredient to make 45 mince pies?

You must show clearly how you got your answer.

(Total for Question 2 is 4 marks)



- 3 The scatter graph shows some information about 10 cars, of the same type and make.
The graph shows the age (years) and the value (£) of each car.



The table shows the age and the value of two other cars of the same type and make.

age (years)	1	3.5
value (£)	8200	5000

- (a) On the scatter graph, plot the information from the table.

(1)

- (b) Describe the relationship between the age and the value of the cars.

(1)

A car of the same type and make is $2\frac{1}{2}$ years old.

- (c) Estimate the value of the car.

£.....

(2)

(Total for Question 3 is 4 marks)



P 4 3 6 0 0 A 0 5 2 8

4 Rhiana plays a game.

The probability that she will lose the game is 0.32

The probability that she will draw the game is 0.05

Rhiana is going to play the game 200 times.

Work out an estimate for the number of times Rhiana will win the game.

.....
(Total for Question 4 is 3 marks)



NOVEMBER 2013

- 1 (a) Use your calculator to work out $\frac{\sqrt{7056}}{0.35 \times 12.8}$

Write down all the figures on your calculator display.
You must give your answer as a decimal.

.....
(2)

- (b) Write your answer to part (a) correct to 1 significant figure.

.....
(1)

(Total for Question 1 is 3 marks)

- 2 Pavel and Katie share some sweets in the ratio 3 : 8
Katie gets 32 sweets.

- (a) How many sweets does Pavel get?

.....
(2)

Katie also has a tin of chocolates.
There are 80 chocolates in the tin.
45% of the chocolates have toffee in the middle.

- (b) Work out the number of chocolates that have toffee in the middle.

.....
(2)

(Total for Question 2 is 4 marks)



3 Bill has some counters in a bag.

3 of the counters are red.

7 of the counters are blue.

The rest of the counters are yellow.

Bill takes at random a counter from the bag.

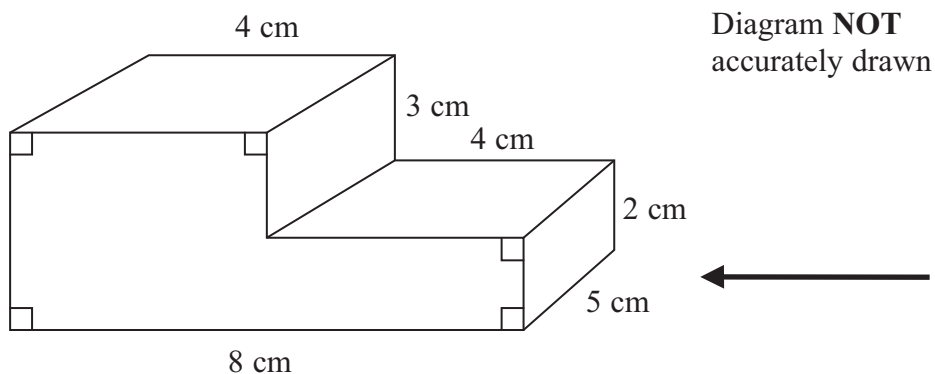
The probability that he takes a yellow counter is $\frac{2}{7}$

How many yellow counters are in the bag before Bill takes a counter?

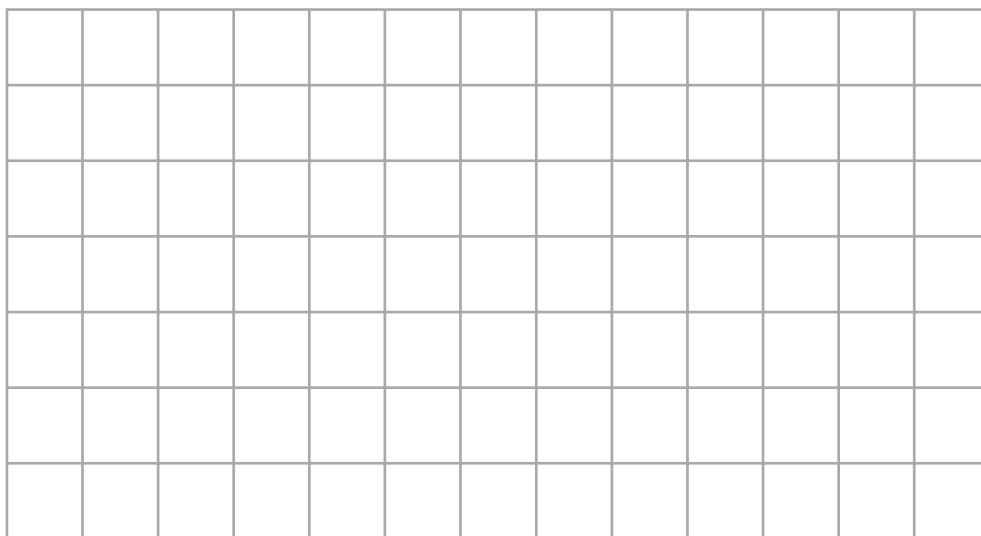
.....
(Total for Question 3 is 2 marks)



- 4 The diagram shows a solid prism.



On the centimetre square grid, draw the side elevation of the solid prism from the direction shown by the arrow.



(Total for Question 4 is 2 marks)



5 Ben goes on holiday to Hong Kong.

In Hong Kong, Ben sees a camera costing HK\$3179.55

In London, an identical camera costs £285

The exchange rate is £1 = HK\$12.30

Ben buys the camera in Hong Kong.

How much cheaper is the camera in Hong Kong than in London?

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(Total for Question 5 is 3 marks)

