JustMaths

BUMPER "BETWEEN PAPERS" PRACTICE PAPER

SET 3 (OF 3)

FOUNDATION TIER (SUMMER 2017)

QUESTIONS

NOT A "BEST" GUESS PAPER.

NEITHER IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT!
YOU ALSO NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 IT MAY STILL COME UP ON PAPERS 2 OR 3 ...

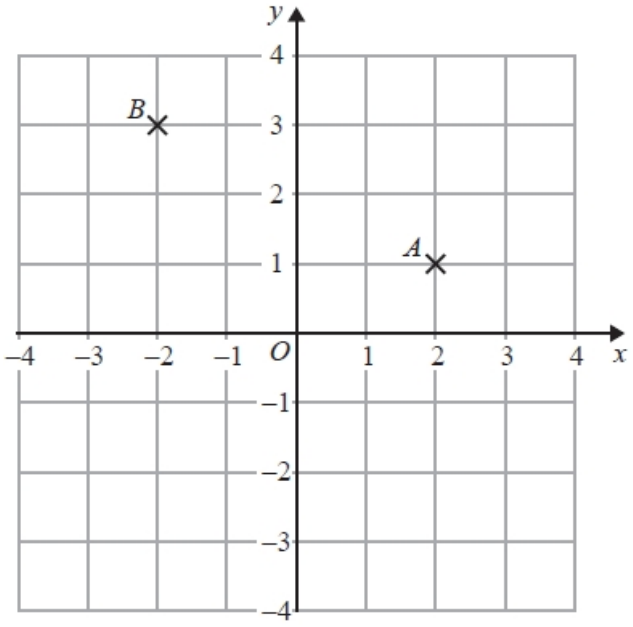
WE KNOW HOW IMPORTANT IT IS TO PRACTISE, PRACTISE, PRACTISE .... SO WE'VE COLLATED A LOAD OF QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDEXCEL NEW 9-1 GCSE MATHS PAPER 1 BUT WE CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE NEXT PAPERS ...

ENJOY!

MEL & SEAGER

	Marks	Actual	
Q1. Coordinates	**4**		
Q2. Pythagoras with trig	**4**		
Q3. Forming and solving	**4**		
Q4. Fractions	**6**		
Q5. Sequences	**4**		
Q6. Forming and solving	**4**		
Q7. Real life graphs	**4**		
Q8. Bearings	**3**		
Q9. Speed, distance and time	**3**		
Q10. Four operations	**3**		
Q11. Best buys	**5**		
Q12. Straight line graphs	**4**		
Q13. Charts and diagrams	**5**		
Q14. 2d and 3d shapes	**4**		
Q15. Quadratic graphs	**4**		
Q16. Interior angles	**4**		
Q17. Probability	**4**		
Q18. Pythagoras and trigonometry	**6**		
Q19. Expand and simplify	**5**		
Q20. Probability	**5**		
Q21. Constructions	**4**		
Q22. Circles	**3**		
Q23. Angle facts	**5**		
Q24. Speed, distance and time	**4**		
Q25. Error intervals	**2**		
Q26. Use of calculator	**2**		
Q27. Place value	**4**		
Q28. Frequency trees	**4**		
Q29. Fractions	**2**		
Q30. Venn diagrams	**4**		
Q31. Number properties	**3**		
Q32. Ratio	**3**		
Q33. Exchange rates	**3**		
Q34. Vectors	**2**		
	130		

Q1.



(a) Write down the coordinates of the point *A*.

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

(b) Write down the coordinates of the point *B*.

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

(c) On the grid, mark with a cross (×) the point (−3, −1).
Label this point *C*.

(1)

(d) On the grid, draw the line $x = 3$

(1)

(Total for question = 4 marks)

Q2.

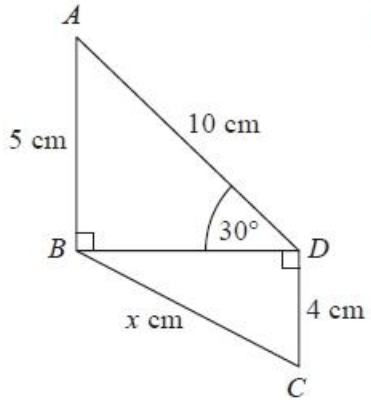


Diagram **NOT** accurately drawn

In the diagram,

triangles *ABD* and *BCD* are right-angled triangles
AB = 5 cm
AD = 10 cm
CD = 4 cm
Angle *ADB* = 30°

Work out the value of *x*.
Give your answer correct to 2 decimal places.

.....cm

(Total for question = 4 marks)

Q3.

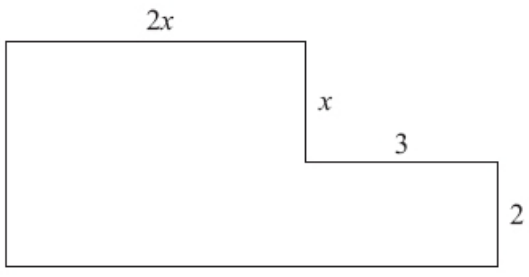


Diagram **NOT** accurately drawn

In the diagram, all measurements are given in centimetres.
All angles are right angles.

Show that the perimeter of the shape can be written as $2(3x + 5)$.

(Total for Question is 4 marks)

Q4. (a) Work out $1\frac{1}{5} \times 2\frac{1}{3}$

Give your answer as a mixed number in its simplest form.

(3)

(b) Work out $2\frac{7}{15} - 1\frac{2}{3}$

(3)

(Total for question = 6 marks)

Q5. Here are the first five terms of an arithmetic sequence.

1 5 9 13 17

(a) Write down an expression, in terms of n, for the nth term of this sequence.

(2)

The nth term of a different number sequence is $3n^2 + 7$

(b) Find the 10th term of this sequence.

(2)

(Total for Question is 4 marks)

Q6. Here is a rectangle.

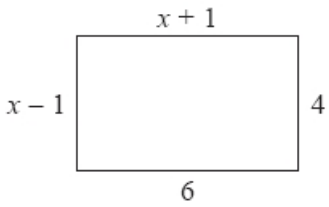


Diagram **NOT** accurately drawn

All measurements on the diagram are in centimetres.

(a) Find the value of x.

(2)

Here is a triangle.

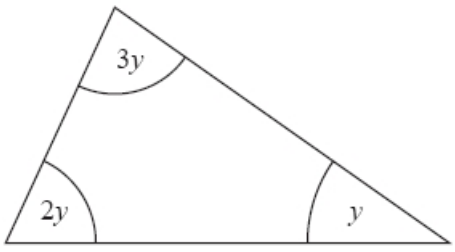


Diagram **NOT** accurately drawn

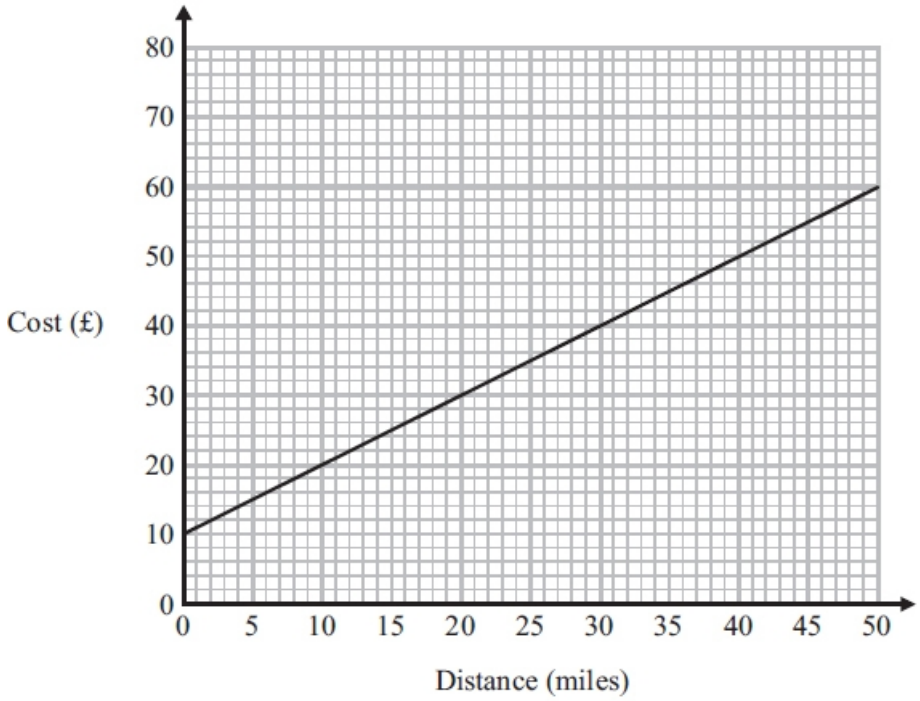
(b) Find the size of the angle marked y.

.....° **(2)**

(Total for question = 4 marks)

Q7. Bill uses his van to deliver parcels.
For each parcel Bill delivers there is a fixed charge plus £1.00 for each mile.

You can use the graph to find the total cost of having a parcel delivered by Bill.



(a) How much is the fixed charge?

£. . . . . .

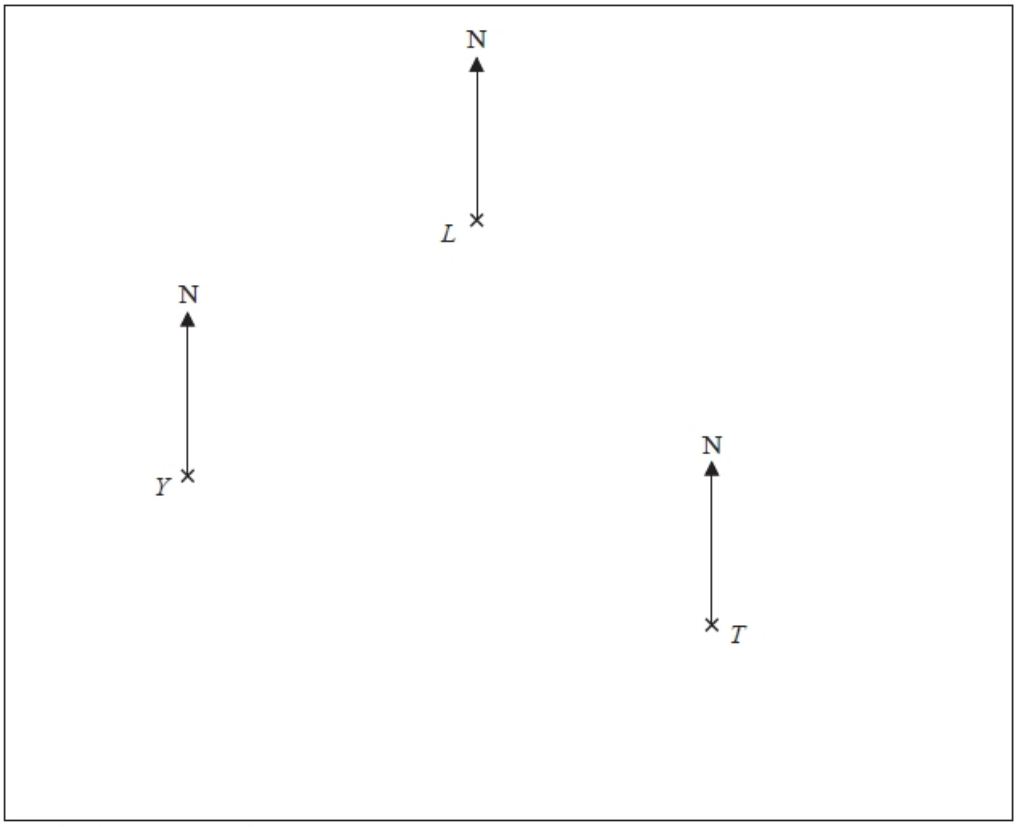
(1)

Ed uses a van to deliver parcels.
For each parcel Ed delivers it costs £1.50 for each mile.
There is **no** fixed charge.
(b) Compare the cost of having a parcel delivered by Bill with the cost of having a parcel delivered by Ed.

(3)

(Total for Question is 4 marks)

Q8. The diagram shows the positions of a lighthouse *L*, a yacht *Y* and a tanker *T* on a map.



Scale 1 cm represents 10 km

(a) Measure the bearing of *L* from *Y*.

..... °

(1)

The tanker, *T*, sails 80 km on a bearing of 320°.

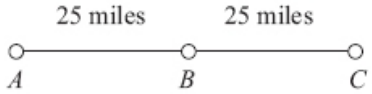
(b) Find the distance, in km, between the tanker and the lighthouse when the tanker is closest to the lighthouse.

..... km

(2)

(Total for question = 3 marks)

Q9.



A, *B* and *C* are 3 service stations on a motorway.

AB = 25 miles
BC = 25 miles

Aysha drives along the motorway from *A* to *C.*

Aysha drives at an average speed of 50 mph from *A* to *B*.
She drives at an average speed of 60 mph from *B* to *C*.

Work out the difference in the time Aysha takes to drive from *A* to *B* and the time Aysha takes to drive from *B* to *C*.
Give your answer in minutes.

(Total for Question is 3 marks)

Q10. Jill buys a toy, a doll and a game at a school fair. She then sells all three items.

The table gives some information about these items.

Item	Buys	Sells	Profit
Toy	£2.00	£3.00	£1.00
Doll	£3.00	£	£1.50
Game	£5.00	£6.40	£ .....
		Total profit	£ .....

Complete the table.

(Total for question = 3 marks)

Q11.

Nail Company	Hammer Company
50 nails	25 nails
£4.15 plus VAT at 20%	£2.95
	Special offer Buy 100 get 25 free

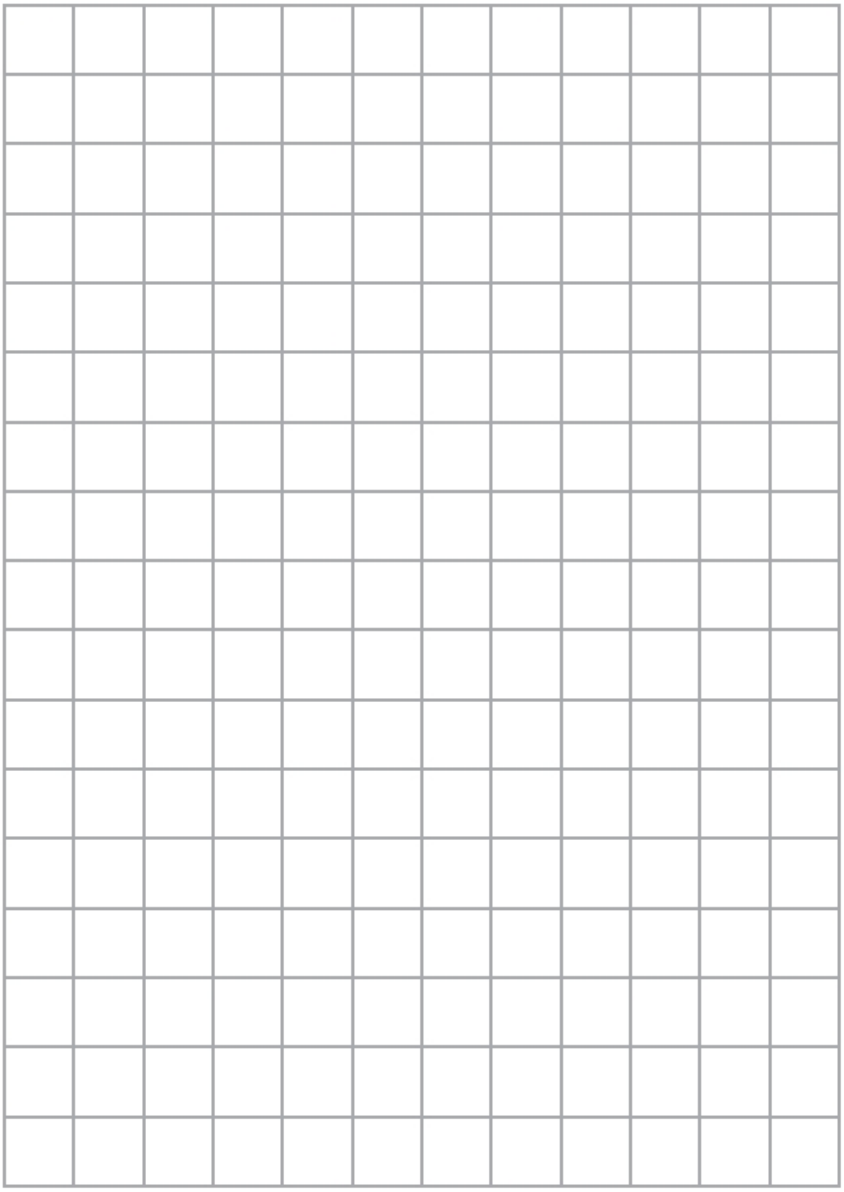
Barak is going to buy 550 nails from one of these companies.

He wants to buy the nails at the cheaper cost.

Where should he buy the nails, from the Nail Company or from the Hammer Company?

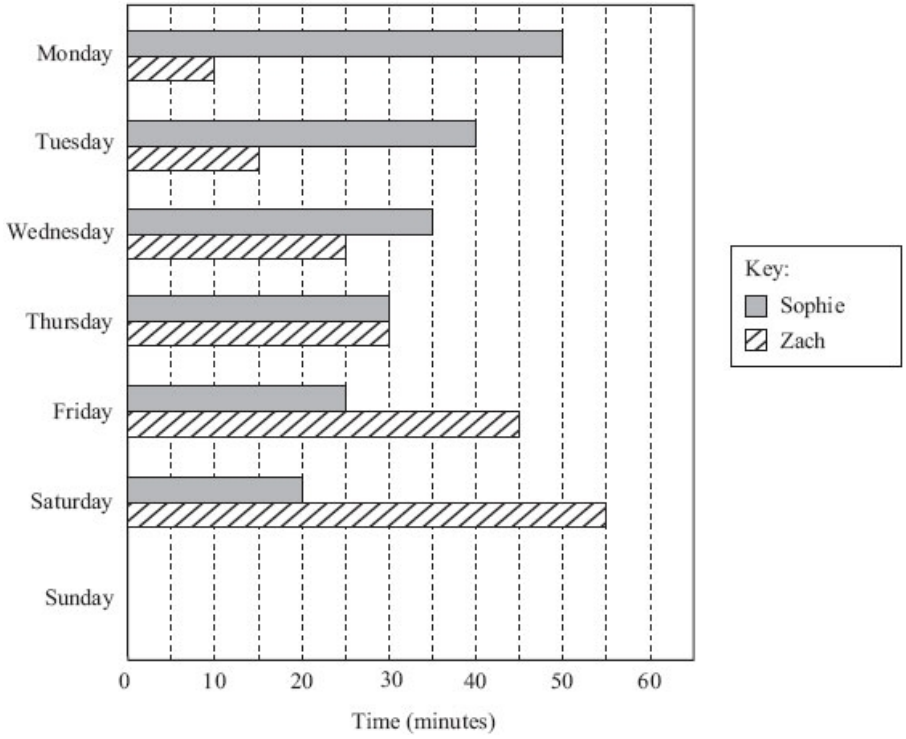
(Total for question = 5 marks)

Q12. On the grid, draw the graph of $y = 2x - 3$ for values of x from -2 to 3



(Total for Question is 4 marks)

Q13. The dual bar chart shows information about the amount of time Sophie and Zach spent on the Internet on each of 6 days last week.



On one of these days, Sophie and Zach spent the same amount of time on the Internet.

(a) Which day?

.....
.....

(1)

(b) Write down the amount of time that Zach spent on the Internet on Friday.

.....
.....

(1)

On Sunday,
Sophie spent 15 minutes on the Internet,
Zach spent 60 minutes on the Internet.

(c) Complete the dual bar chart.

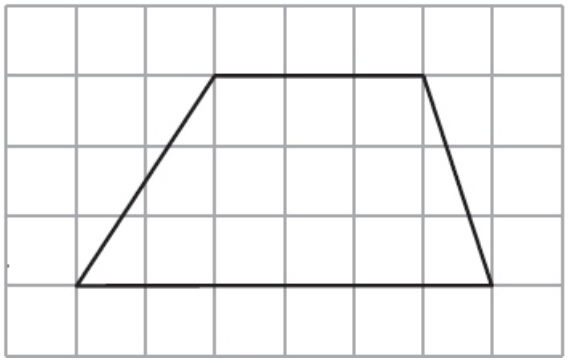
(2)

(d) Using the information in the dual bar chart, compare the amounts of time Sophie spent on the Internet last week to the amounts of time Zach spent on the Internet last week.

(1)

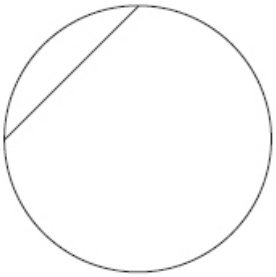
(Total for Question is 5 marks)

Q14. a) Here is a quadrilateral.



Write down the mathematical name of this quadrilateral.

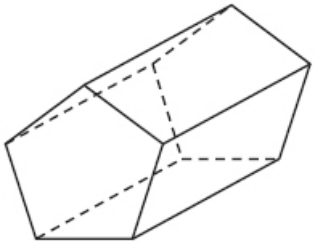
(1)



(b) Write down the mathematical name for the straight line inside this circle.

(1)

(c) Here is a solid prism.



(i) Write down the number of faces.

. . . . . .faces

(ii) Write down the number of vertices.

. . . . . .vertices

(2)

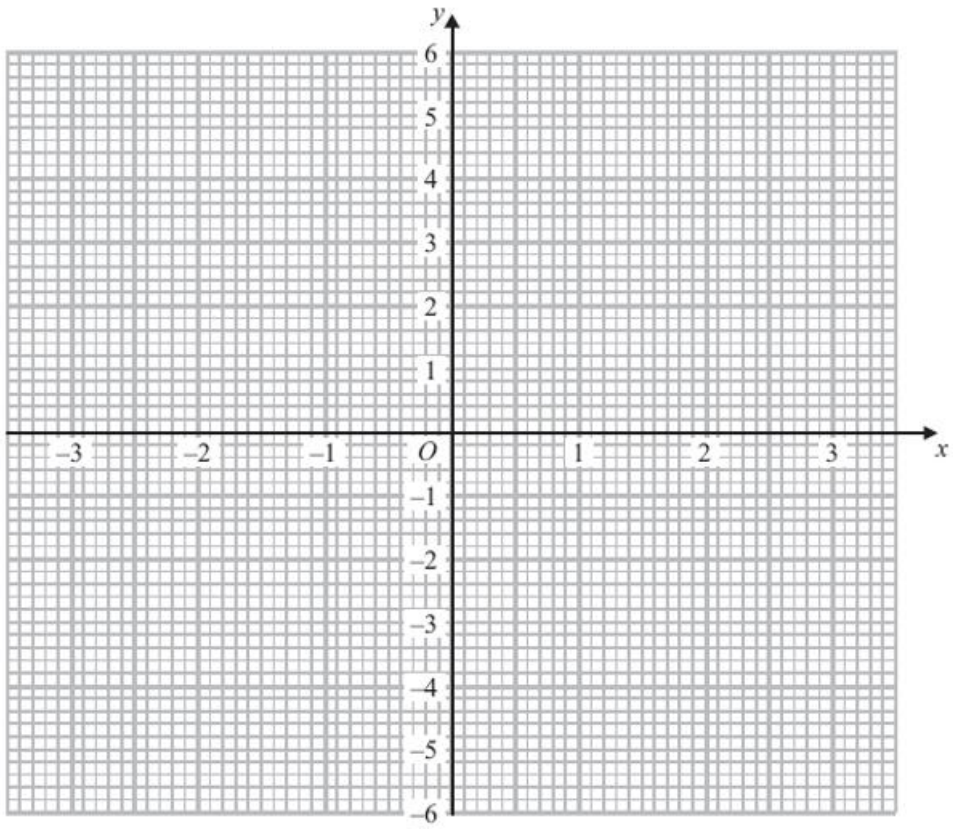
(Total for Question is 4 marks)

Q15.(a) Complete the table of values for $y = x^2 - 4$

x	−3	−2	−1	0	1	2	3
y		0	−3			0	5

(2)

(b) On the grid, draw the graph of $y = x^2 - 4$ for $x = -3$ to $x = 3$



(2)

(Total for Question is 4 mark)

Q16.

ABCDE is a regular pentagon.
ACFG is a square.

Work out the size of angle *DCF*.
You must show all your working.

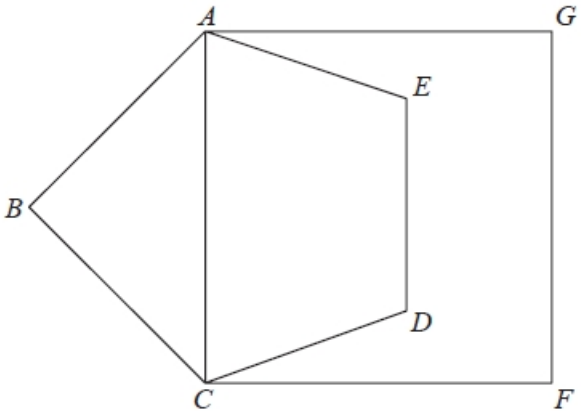


Diagram **NOT** accurately drawn

.....°

(Total for question = 4 marks)

Q17. Carolyn has 20 biscuits in a tin.

She has

12 plain biscuits
5 chocolate biscuits
3 ginger biscuits

Carolyn takes at random two biscuits from the tin.

Work out the probability that the two biscuits were **not** the same type.

(Total for Question is 4 marks)

Q18.

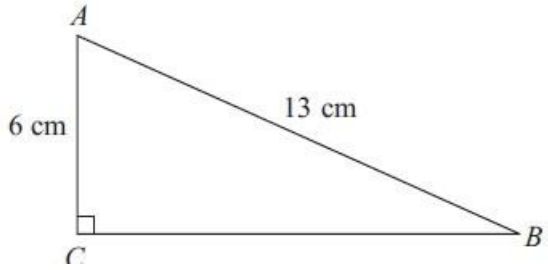


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.
AC = 6 cm
AB = 13 cm

(a) Work out the length of *BC*.
Give your answer correct to 3 significant figures.

(3)

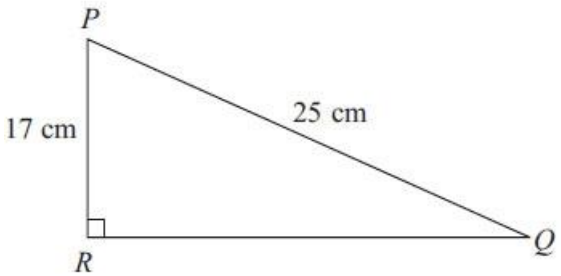


Diagram **NOT** accurately drawn

PQR is a right-angled triangle.
PR = 17 cm
PQ = 25 cm

(b) Work out the size of angle *RPQ.*
Give your answer correct to 1 decimal place.

(3)

(Total for Question is 6 marks)

Q19. (a) Expand $4(3x + 5)$

(1)

(b) Expand and simplify $2(x - 4) + 3(x + 5)$

(2)

(c) Expand and simplify $(x + 4)(x + 6)$

(2)

(Total for Question is 5 marks)

Q20. There are only red counters, yellow counters, blue counters and green counters in a bag. Olu takes at random a counter from the bag.

The table shows each of the probabilities.

Colour	Red	Yellow	Blue	Green
Probability	0.6	0.25	$2x$	x

The probability that Olu will take a blue counter is twice the probability that he will take a green counter.

(a) Work out the value of x.

.....**(3)**

Olu takes a counter from the bag.
He writes down the colour of the counter.
He puts the counter back in the bag.

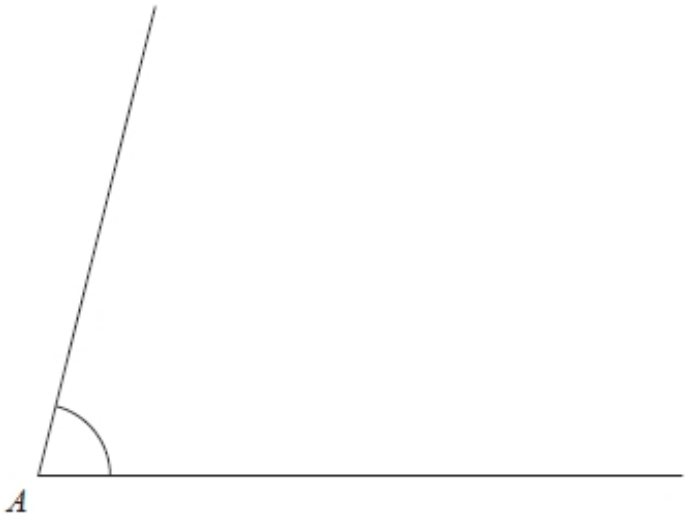
Olu does this 50 times.

(b) Work out an estimate for the number of times that Olu takes a red counter from the bag.

.....**(2)**

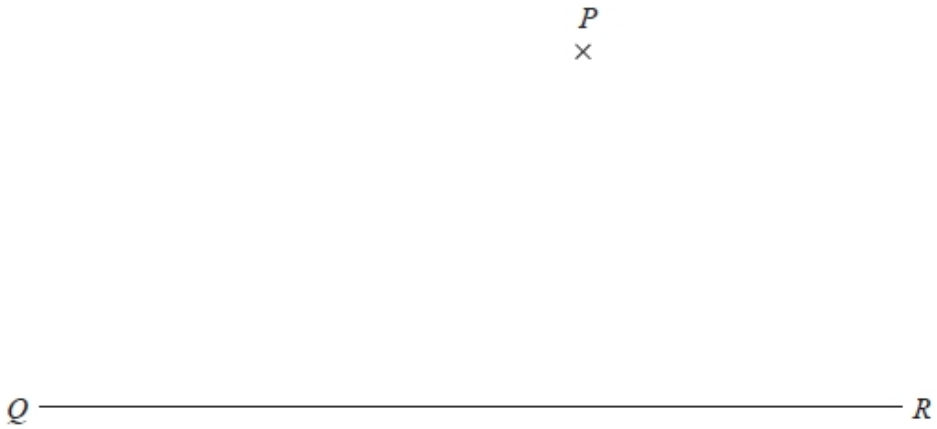
(Total for question = 5 marks)

Q21 (a) Use ruler and compasses to bisect the angle at *A*.
You must show all your construction lines.



(2)

(b) Use ruler and compasses to construct the perpendicular from the point *P* to the line *QR*.
You must show all your construction lines.

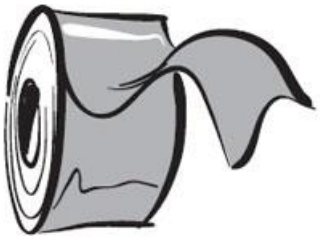


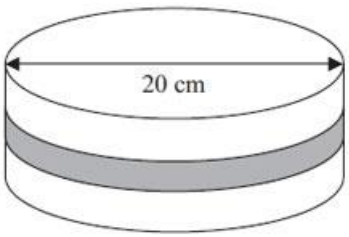
(2)

(Total for question = 4 marks)

Q22. Susan has a round cake. The cake has a diameter of 20 cm.

Diagram **NOT** accurately drawn





Susan wants to put a ribbon round the cake. What is the least length of ribbon she can use?

(Total for Question is 3 marks)

Q23.

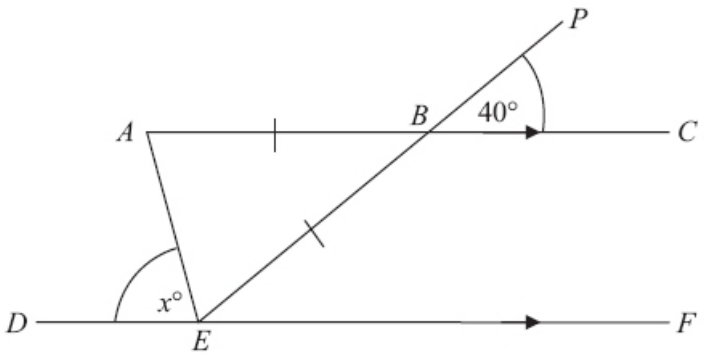


Diagram **NOT** accurately drawn

ABC is parallel to *DEF*.
EBP is a straight line.
AB = *EB*.
Angle *PBC* = 40°.
Angle *AED* = *x*°.

Work out the value of *x*.
Give a reason for each stage of your working.

(Total for Question is 5 marks)

Q24. Sean drives from Manchester to Gretna Green.

He drives at an average speed of 50 mph for the first 3 hours of his journey.

He then has 150 miles to drive to get to Gretna Green.

Sean drives these 150 mies at an average speed of 30 mph.

Sean says: "My average speed from Manchester to Gretna Green was 40 mph."

Is Sean right? You must show how you get your answer.

(Total for question is 4 marks)

Q25. The length, L cm, of a line is measured as 13 cm correct to the nearest centimetre.

Complete the following statement to show the range of possible values of L

..... ≤L < ..... [2]

Q26. Use your calculator to work out $\frac{2}{1.5 + 2.45}$

Write down all the figures on your calculator display.

You must give your answer as a decimal.

..... (2)

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

..... (1)

Q27. Here are four cards. There is a number on each card.

4	5	2	1

(a) Write down the largest 4-digit even number that can be made using each card only once.

..... **(2)**

(b) Write down all the 2-digit numbers that can be made using these cards.

(2)

Q28. A teacher asked 30 students if they had a school lunch or a packed lunch or if they went home at lunch.

17 of the students were boys

4 of the boys had a packed lunch

7 girls had a school lunch

3 of the 5 students who went home were boys

Use a frequency tree to work out the number of students who had a packed lunch.

(4)

Q29. Lethna worked out $\frac{2}{5} + \frac{1}{2}$

She wrote:

$$\frac{2}{5} + \frac{1}{2} = \frac{2}{10} + \frac{1}{10} = \frac{3}{10}$$

The answer of $\frac{3}{10}$ is wrong.

(a) Describe one mistake that Lethna made.

[1]

Dave worked out $1\frac{1}{2} \times 5\frac{1}{3}$

He wrote:

$1 \times 5 = 5 \; and \; \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

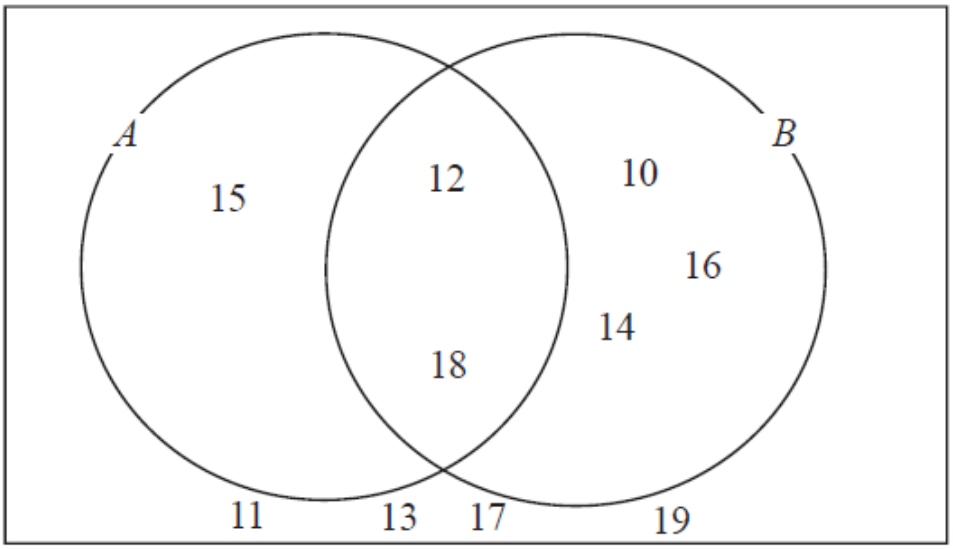
$so \; 1\frac{1}{2} \times 5\frac{1}{3} = 5\frac{1}{6}$

The answer of $5\frac{1}{6}$ is wrong.

(b) Describe one mistake that Dave made.

[1]

Q30. Here is a Venn diagram.



(a) Write down the numbers that are in set

(i) A ∪ B

(ii) A ∩ B

[2]

One of the numbers in the diagram is chosen at random.

(b) Find the probability that the number is in set A'

[2]

Q31. Write down an example to show that each of the following statements is **not** correct.

(a) The sum of an odd number and an even number is even.

(b) The product of two prime numbers is never even.

(c) When you square an integer the result is always an even integer.

(Total for Question 8 is 3 marks)

Q32. On a farm

the number of cows and the number of sheep are in the ratio 6 : 5

the number of sheep and the number of pigs are in the ratio 2 : 1

The total number of cows, sheep and pigs on the farm is 189

How many sheep are there on the farm?

[3]

Q33. The exchange rate in London is £1 = €1.14

The exchange rate in Paris is €1 = £0.86

Elaine wants to change some pounds into euros.

In which of these cities would Elaine get the most euros? You must show all your working.

(3)

Q34. a = $\begin{pmatrix} 3 \\ -7 \end{pmatrix}$, b = $\begin{pmatrix} 4 \\ 2 \end{pmatrix}$

Work out b – 2a as a column vector.

[2]