

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Mathematics A

Paper 1 (Non-Calculator)

Foundation Tier

Monday 11 June 2012 – Afternoon

Time: 1 hour 45 minutes

Paper Reference

1MA0/1F

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

Total Marks

Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- Answer all questions.
- Answer the questions in the spaces provided – there may be more space than you need.
- Calculators must not be used.



Information

- The total mark for this paper is 100
- The marks for each question are shown in brackets – use this as a guide as to how much time to spend on each question.
- Questions labelled with an asterisk (*) are ones where the quality of your written communication will be assessed.

Advice

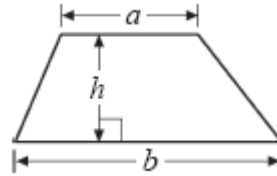
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

GCSE Mathematics 1MA0

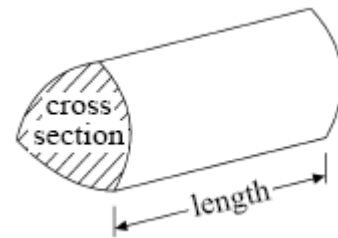
Formulae: Foundation Tier

**You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.**

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



Volume of prism = area of cross section \times length



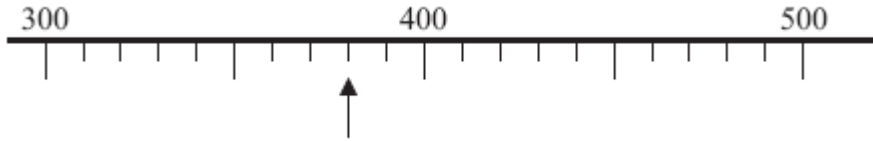
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

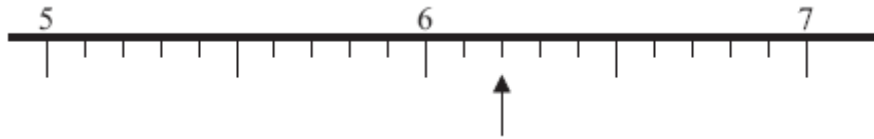
You must NOT use a calculator.

1.



(a) Write down the number marked by the arrow.

.....
(1)



(b) Write down the number marked by the arrow.

.....
(1)



(c) Find the number 34 on the number line.
Mark it with an arrow (↑).

(1)

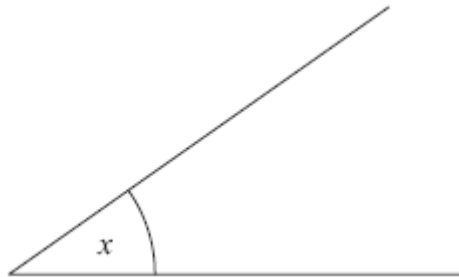
(Total for Question 1 is 3 marks)

2. (a) Measure the length of the line AB .
Give your answer in centimetres.



..... cm
(1)

- (b) Measure the size of angle x .



.....°
(1)

- (c) In the space below, draw accurately a circle of radius 5 cm.
Use the point C as the centre of your circle.

C
×

(1)

(Total for Question 2 is 3 marks)

3. Helen carried out a survey to find out the fruit her friends like best.

Here are her results.

apples oranges peaches bananas pineapples
bananas bananas oranges apples peaches
bananas oranges pineapples oranges bananas
peaches apples bananas apples bananas

(a) Complete the table for Helen's results.

Fruit	Tally	Frequency
apples		
bananas		
oranges		
peaches		
pineapples		

(2)

(b) Write down the number of Helen's friends who like bananas best.

.....
(1)

(c) On the grid, draw a suitable chart or diagram to show Helen's results.



(3)

(Total for Question 3 is 6 marks)

4. Daniel buys

- one loaf of bread costing £1.18
- one tub of spread costing 94p
- two** jars of strawberry jam.

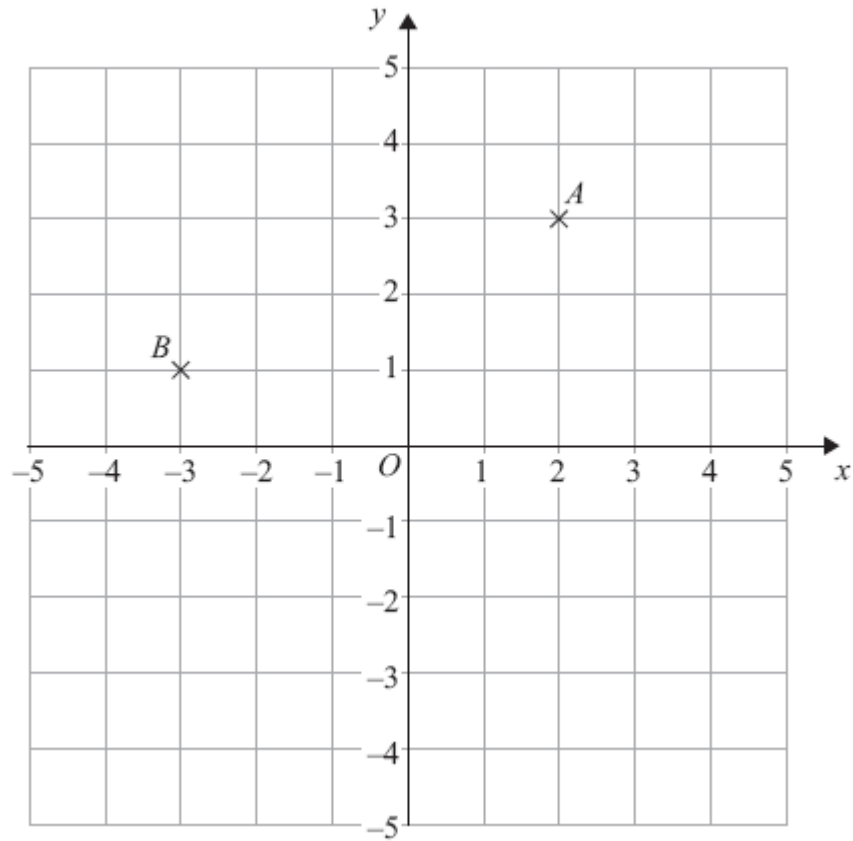
Daniel pays with a £5 note.
He gets 30p change.

Work out the cost of **one** jar of strawberry jam.

£

(Total for Question 4 is 3 marks)

5.



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

(..... ,)

(ii) Write down the coordinates of the point B .

(..... ,)

(2)

(b) On the grid, mark with a cross (\times) the point $(3, -4)$.
Label this point C .

(1)

(Total for Question 5 is 3 marks)

6. Samina recorded the maximum temperature and the minimum temperature on each of six days in January.

The table shows her results.

	Mon	Tues	Wed	Thurs	Fri	Sat
Maximum temperature	1 °C	3 °C	2 °C	0 °C	3 °C	4 °C
Minimum temperature	-4 °C	-2 °C	-4 °C	-5 °C	-3 °C	-2 °C

- (a) Write down the lowest temperature.

..... °C
(1)

- (b) Work out the difference between the maximum temperature on Wednesday and the minimum temperature on Wednesday.

..... °C
(1)

The minimum temperature on Sunday was 5 °C higher than the minimum temperature on Saturday.

- (c) Work out the minimum temperature on Sunday.

..... °C
(1)

(Total for Question 6 is 3 marks)

7. Margaret is going to have a meal.
She can choose one starter and one main course.

Menu	
Starter	Main course
Pate	Beef
Melon	Salmon
Ham	Lasagne

Write down all the possible combinations Margaret can choose.

.....

.....

.....

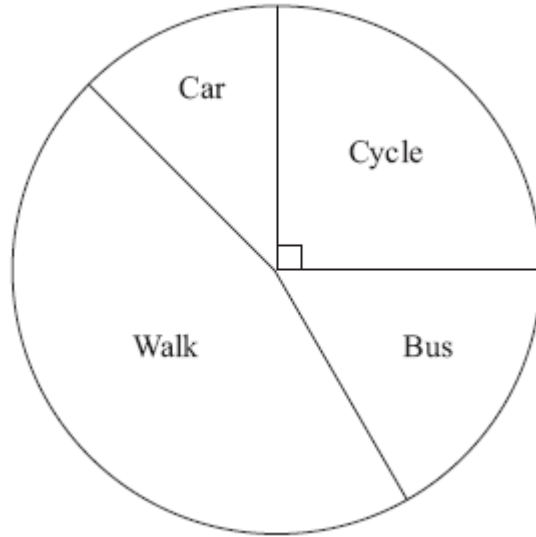
.....

.....

.....

(Total for Question 7 is 2 marks)

8. Harry asked each student in his class how they travelled to school that day. He used the results to draw this pie chart.



- (a) How did most of the students travel to school?

.....
(1)

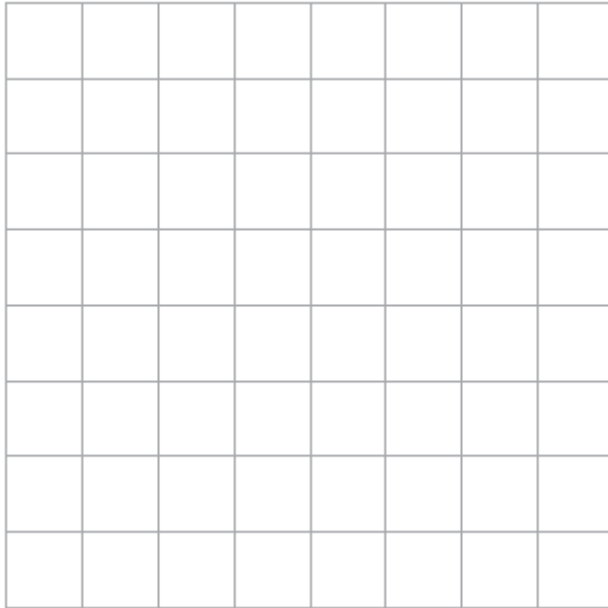
Harry asked a total of 24 students.

- (b) Work out the number of students who cycled to school.

.....
(2)

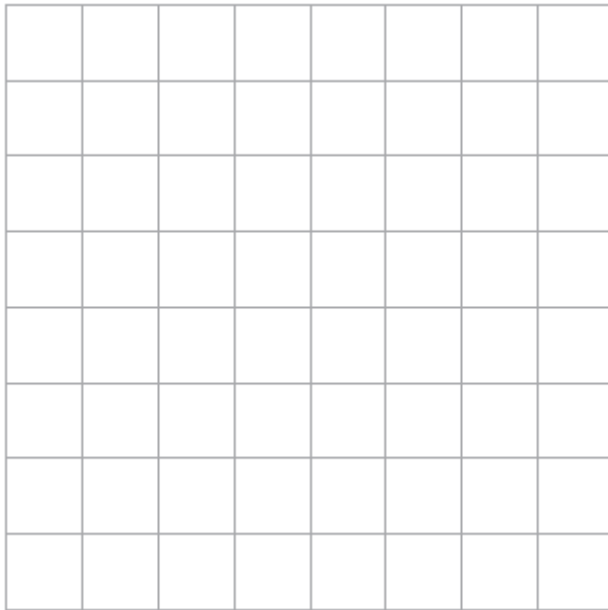
(Total for Question 8 is 3 marks)

9. (a) On the grid, draw an isosceles triangle.



(1)

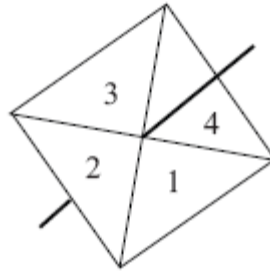
- (b) On the grid, draw a rectangle with an area of 12 cm^2 .



(2)

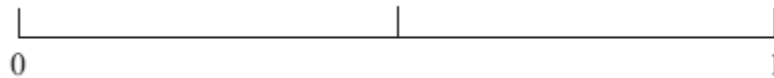
(Total for Question 9 is 3 marks)

10. Here is a fair 4-sided spinner.



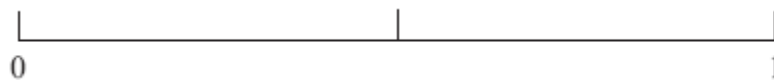
Simon is going to spin the spinner once.
The spinner will land on 1 or on 2 or on 3 or on 4

- (a) On the probability scale, mark with a letter **A** the probability that the spinner will land on the number 6.



(1)

- (b) On the probability scale, mark with a letter **B** the probability that the spinner will land on the number 3.



(1)

(Total for Question 10 is 2 marks)

11. (a) Write down the value of $\sqrt{81}$

.....
(1)

- (b) Work out the value of $5^2 + 2^3$

.....
(2)

(Total for Question 11 is 3 marks)

12. Amy has some toy bricks.
Each brick is a cube of side 1 cm.

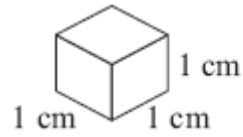
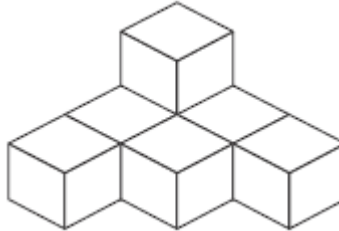


Diagram **NOT**
accurately drawn

Amy uses some of the bricks to make this solid shape.

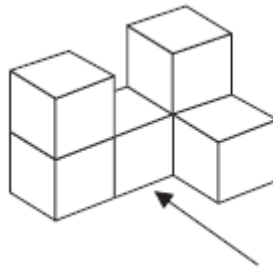


Amy adds some more of the bricks to this solid shape to make a cube of side 3 cm.

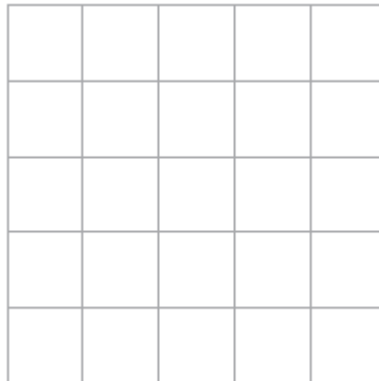
- (a) How many bricks does Amy add?

.....
(2)

Naveed uses some of the bricks to make this solid shape.



- (b) On the grid below, draw the view of the solid shape from the direction shown by the arrow.



(2)

(Total for Question 12 is 4 marks)

13. Here is part of a train timetable from Birmingham to Leicester.

Birmingham	06 23	06 53	07 23	07 53
Coleshill	06 35	07 05	07 35	08 05
Nuneaton	07 00	07 22	07 51	08 22
Hinckley	00 00	07 29	07 58	08 29
Leicester	07 17	07 48	08 17	08 48

A train leaves Birmingham at 06 53

(a) (i) What time should this train get to Hinckley?

.....

(ii) How many minutes should this train take to get to Hinckley?

..... minutes
(2)

Silvia wants to catch a train in Nuneaton.
She needs to get to Leicester **before** 08 30

(b) Write down the time of the latest train Silvia can catch from Nuneaton.

.....
(1)

A train will leave Leicester at 07 27 for Stansted Airport.
The train should take 2 hours 28 minutes to go from Leicester to Stansted Airport.

(c) What time should the train get to Stansted Airport?

.....
(1)

(Total for Question 13 is 4 marks)

14. The diagram shows a rectangle and a square.

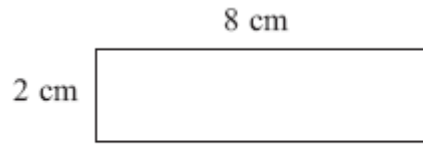


Diagram **NOT**
accurately drawn

The perimeter of the rectangle is the same as the perimeter of the square.

Work out the length of one side of the square.

..... cm

(Total for Question 14 is 4 marks)

15. The table shows the minimum distance and the maximum distance people should sit from different sized TV screens when watching TV.

TV screen size (inches)	Minimum distance (feet)	Maximum distance (feet)
28	3.5	7
30	3.75	7.5
32	4	8
36	4.5	9
38	4.75	9.5
40	5	10
42	5.25	10.5

James has a TV with a screen size of 32 inches.
He is going to watch his TV.

- (a) What is the minimum distance James should sit from the screen?

..... feet
(1)

Sheraz has a TV with a screen size of 38 inches.
He is going to watch his TV.

- (b) Work out the difference between the minimum distance and the maximum distance Sheraz should sit from the screen.

..... feet
(2)

You can use this rule to work out the maximum distance to sit from a TV screen.

$\text{Maximum distance in feet} = \text{screen size in inches} \div 4$

Clare has a TV with a screen size of 24 inches.
She is going to watch her TV.

(c) Use the rule to work out the maximum distance Clare should sit from the screen.

..... feet
(1)

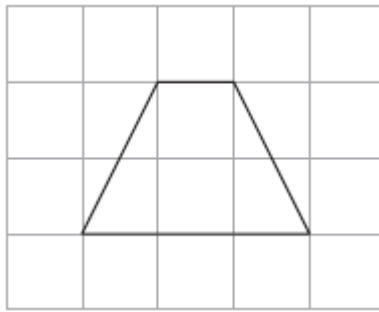
Richard should sit a maximum distance of 12 feet from his screen.

(d) Work out the screen size of Richard's TV.

..... inches
(2)

(Total for Question 15 is 6 marks)

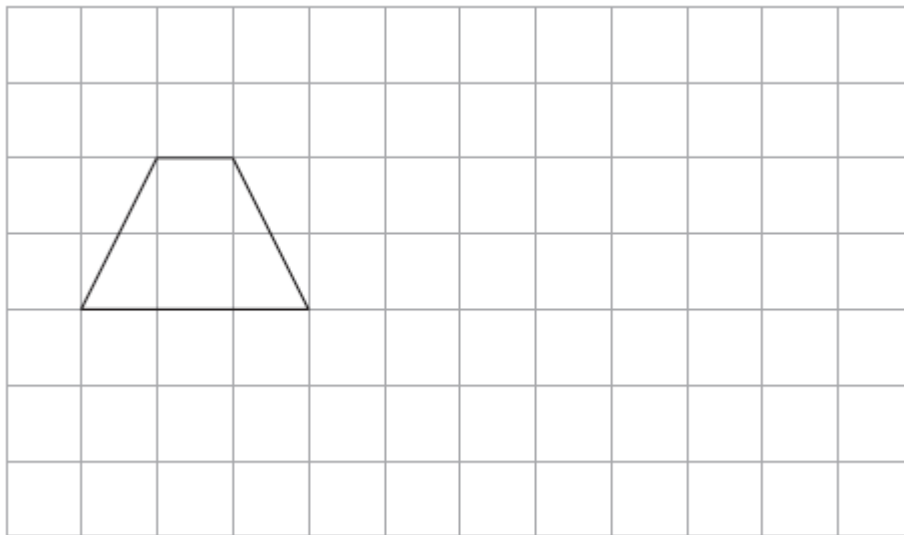
16. A quadrilateral has been drawn on the grid.



- (a) Write down the mathematical name of this quadrilateral.

.....
(1)

- (b) On the grid below, show how the quadrilateral tessellates.
You should draw at least 6 shapes.



(2)
(Total for Question 16 is 3 marks)

***17** Debbie, Salma and Wendy did a Maths test.
The total for the test was 40 marks.

Debbie got 16 out of 40

Salma got 35% of the 40 marks.

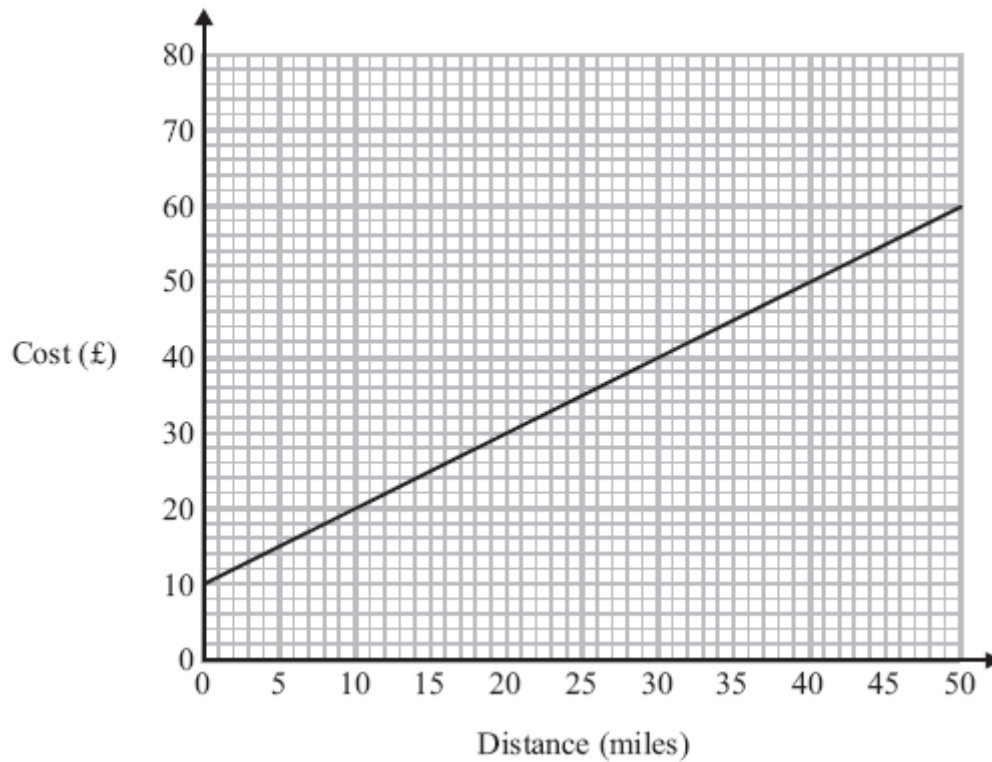
Wendy got $\frac{3}{8}$ of the 40 marks.

Who got the highest mark?
You must show all your working.

(Total for Question 17 is 4 marks)

- *18** 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)

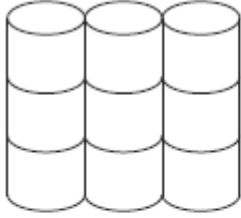
Ed uses a van to deliver parcels.
 For each parcel Ed delivers it costs £1.50 for each mile.
 There is **no** fixed charge.

- (b) Compare the cost of having a parcel delivered by Bill with the cost of having a parcel delivered by Ed.

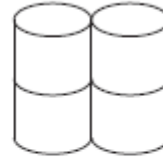
(3)

(Total for Question 18 is 4 marks)

19.



Pack of 9
toilet rolls
£4.23



Pack of 4
toilet rolls
£1.96

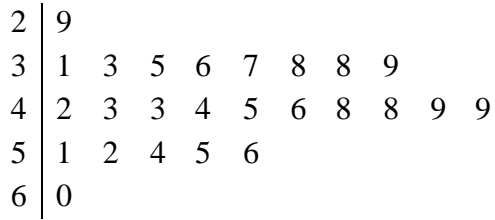
A pack of 9 toilet rolls costs £4.23
A pack of 4 toilet rolls costs £1.96

Which pack gives the better value for money?

You must show all your working.

.....
(Total for Question 19 is 3 marks)

20. The stem and leaf diagram shows some information about the speeds of 25 cars.



Key:
 2 | 9 means 29 miles per hour

(a) How many of the 25 cars had a speed of more than 50 miles per hour?

.....
(1)

(b) Find the median speed.

..... miles per hour
(1)

(c) Work out the range of the speeds.

..... miles per hour
(2)

(Total for Question 20 is 4 marks)

*21.

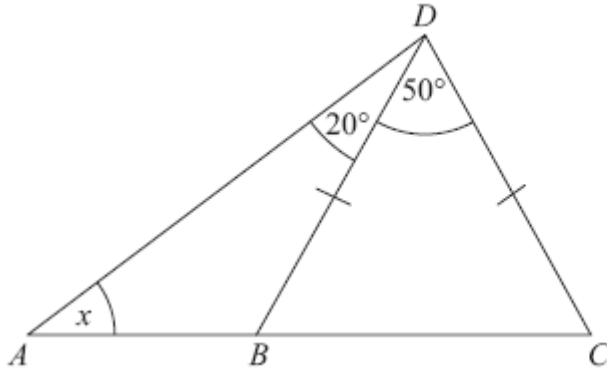


Diagram **NOT**
accurately drawn

ABC is a straight line.

$BD = CD$.

Angle $BDC = 50^\circ$.

Angle $ADB = 20^\circ$.

Work out the size of the angle marked x .

Give reasons for your answer.

(Total for Question 21 is 4 marks)

22. The diagram shows a patio in the shape of a rectangle.

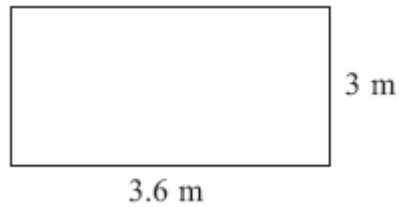


Diagram **NOT**
accurately drawn

The patio is 3.6 m long and 3 m wide.

Matthew is going to cover the patio with paving slabs.
Each paving slab is a square of side 60 cm.

Matthew buys 32 of the paving slabs.

- (a) Does Matthew buy enough paving slabs to cover the patio?
You must show all your working.

.....
(3)

The paving slabs cost £8.63 each.

- (b) Work out the total cost of the 32 paving slabs.

£
(3)

(Total for Question 22 is 6 marks)

23. Here are the ingredients needed to make 12 shortcakes.

Shortcakes	
Makes 12 shortcakes	
50 g	of sugar
200 g	of butter
200 g	of flour
10 ml	of milk

Liz makes some shortcakes.
She uses 25 ml of milk.

(a) How many shortcakes does Liz make?

.....
(2)

Robert has 500 g of sugar
 1000 g of butter
 1000 g of flour
 500 ml of milk

(b) Work out the greatest number of shortcakes Robert can make.

.....
(2)

(Total for Question 23 is 4 marks)

24. Buses to Acton leave a bus station every 24 minutes.
Buses to Barton leave the same bus station every 20 minutes.

A bus to Acton and a bus to Barton both leave the bus station at 9 00 am.

When will a bus to Acton and a bus to Barton next leave the bus station at the same time?

.....
(Total for Question 24 is 3 marks)

25. (a) Expand $3(2y - 5)$

.....
(1)

- (b) Factorise completely $8x^2 + 4xy$

.....
(2)

- (c) Make h the subject of the formula

$$t = \frac{gh}{10}$$

$h =$
(2)

(Total for Question 25 is 5 marks)

26.



Take **two 5 ml** spoons full
twice a day

There are 300 ml of medicine in a bottle.

Mary has to take two 5 ml spoons full of medicine twice a day.

Mary has to take the medicine until the bottle is empty.

(a) How many days does Mary have to take the medicine for?

..... days
(3)

You can work out the amount of medicine, c ml, to give to a child by using the formula

$$c = \frac{ma}{150}$$

m is the age of the child, in months.

a is an adult dose, in ml.

A child is 30 months old.

An adult's dose is 40 ml.

(b) Work out the amount of medicine you can give to the child.

..... ml
(2)

(Total for Question 26 is 5 marks)

27.

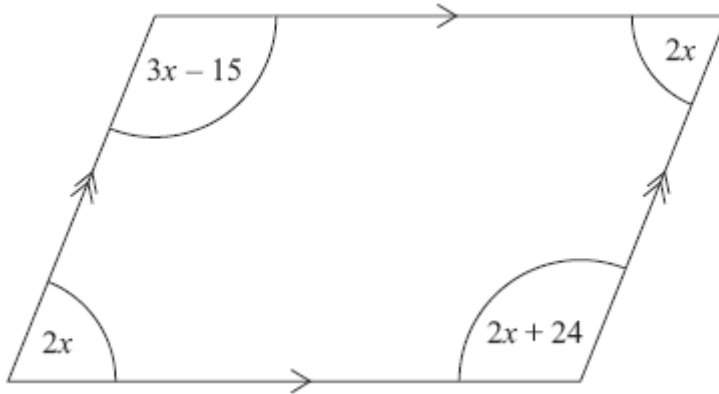


Diagram **NOT**
accurately drawn

The diagram shows a parallelogram.
The sizes of the angles, in degrees, are

- $2x$
- $3x - 15$
- $2x$
- $2x + 24$

Work out the value of x .

$x = \dots\dots\dots$

(Total for Question 27 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS