

JustMaths

Paper 2 (Calculator)

BEST GUESS FOUNDATION – JUNE 2015 (no guarantees!)

Name: _____

Total Marks: _____

Q.	Max	Actual	RAG		Q.	Max	Actual	RAG
1	2				16	4		
2	4				17	2		
3	2				18	2		
4	3				19	3		
5	3				20	5		
6	4				21	2		
7	3				22	3		
8	3				23	2		
9	3				24	4		
10	2				25	2		
11	3				26	3		
12	4				27	3		
13	4				28	5		
14	5				29	4		
15	2				30	4		
					31	6		

1. (a) In the space below, draw a straight line 10 cm long.

(b) Mark with a cross (\times), the midpoint of the line below.



2. Edwin goes to a restaurant with some friends.

Here are the meals they have

2 fish and chips at £9.25 each

1 chicken and chips at £9.50

1 roast lamb at £10.55

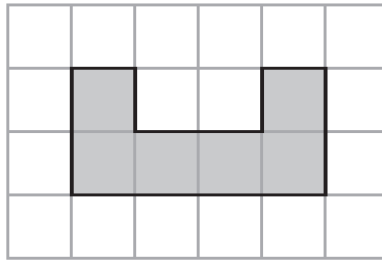
4 puddings at £4.55 each.

Edwin pays for the meals with three £20 notes.

How much change should Edwin get?

3. Work out the number that is halfway between 3.9 and 4.6

4. Here is a shaded shape on a centimetre grid.



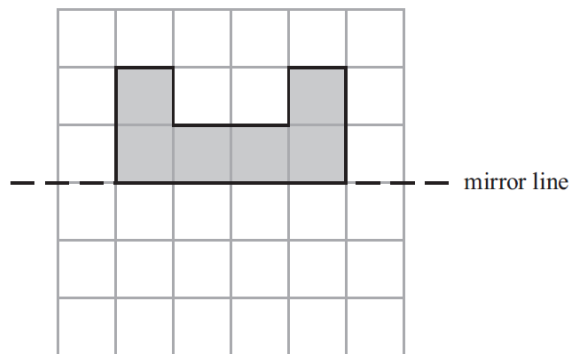
(a) What is the area of the shaded shape?

(1)

(b) What is the perimeter of the shaded shape?

(1)

(c) On the grid below, reflect the shape in the mirror line.



(1)

5. 38506 people watch a football match.

(a) Write 38506 to the nearest hundred.

(1)

(b) Write down the value of the **5** in the number 38506

(1)

7619 of the 38506 people are female.

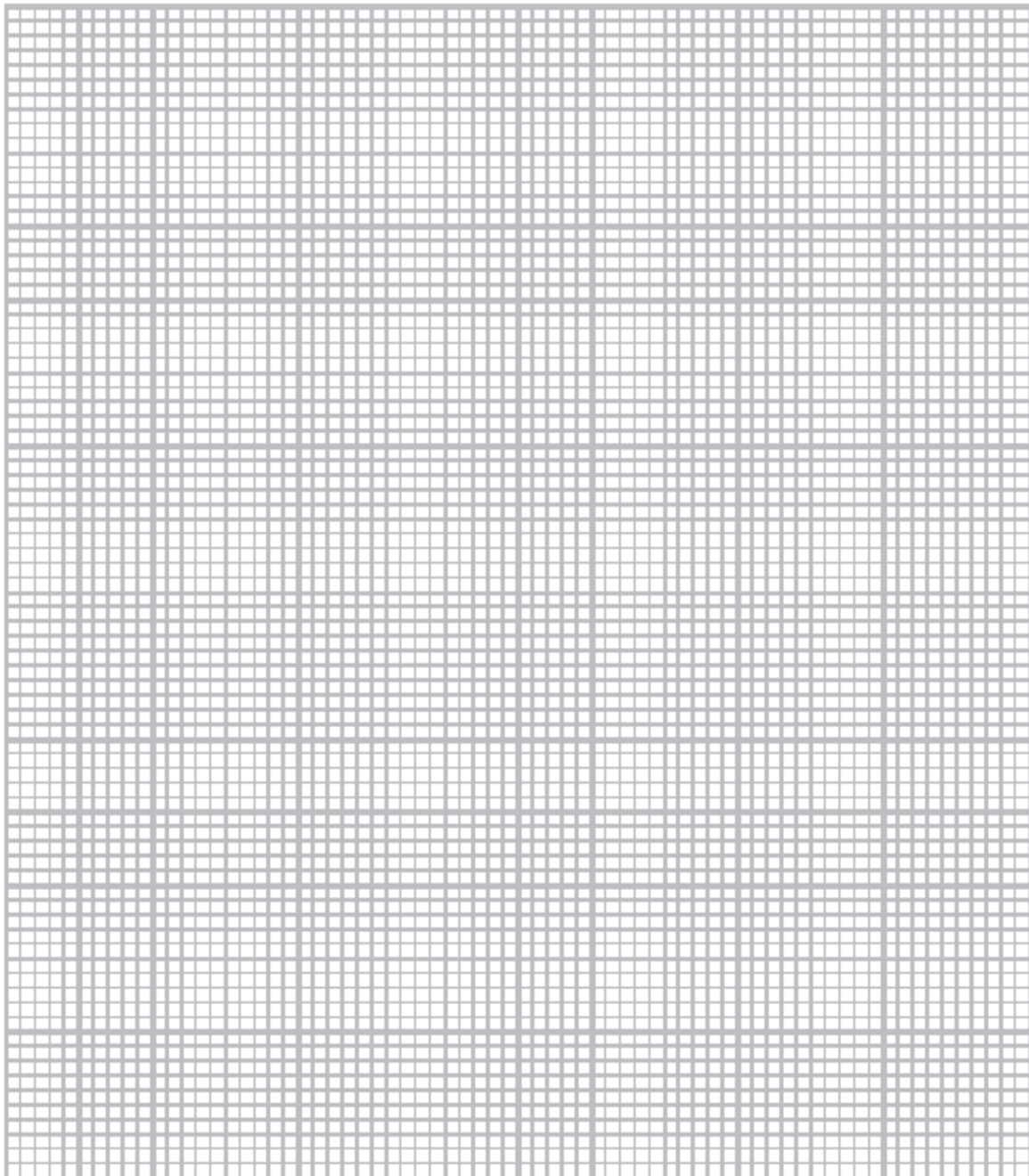
(c) Work out the number of males.

(1)

6. Kitty and George sell cars. The table shows the numbers of cars sold by Kitty and by George in the first four months of 2013

	January	February	March	April
Kitty	2	5	13	10
George	4	7	9	10

Show this information in a suitable diagram.



7. Here is a list of numbers.

11 12 13 14 15 16 17 18 19 20

From the list, write down

(a) a factor of 24

(1)

(b) a multiple of 7

(1)

(c) a square number

(1)

8. Here is a list of all the coins in Amira's purse.

£1	5p	20p	1p
20p	1p	10p	£1
20p	10p	£1	20p
10p	20p	20p	5p

Complete the tally table for this information.

Coin		
£1		
50p		
20p		
10p		
5p		
2p		
1p		

(3)

9 (a) Write 0.45 as a percentage

(1)

(b) Write 25% as a fraction. Give your answer in its simplest form.

(2)

10. The table shows the names of five of Janette's friends.

Boys	Girls
Dodi	Anna
James	Michelle
William	

She chooses one of the boys and one of the girls to be in her team.

Write down all the possible combinations Janette can choose.

(2)

11. Here is a tile.



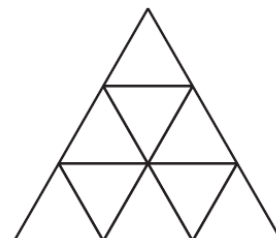
Here is a sequence of patterns made from these tiles.



Pattern number 1



Pattern number 2



Pattern number 3

(a) How many of these tiles are needed to make Pattern number 7?

(1)

(b) Here are the first five terms of an arithmetic sequence.

2 6 10 14 18

Find, in terms of n , an expression for the n th term of this sequence.

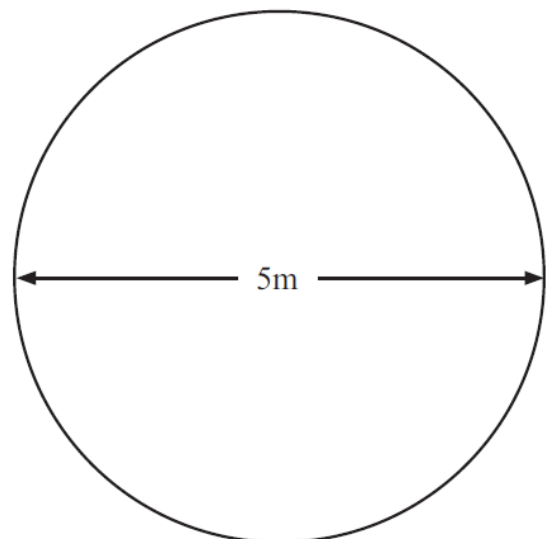
(2)

12. Ian has a flower garden in the shape of a circle. The diameter of the garden is 5 metres. Ian wants to put fencing around the edge of the garden.

The fencing costs £1.80 per metre.

Work out the total cost of the fencing.

(4)



13. 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

Karen wants to make 45 mince pies.

Karen has

1 kg of butter

1 kg of flour

500 g of sugar

600 g of mincemeat

6 eggs

Does Karen have enough of each ingredient to make 45 mince pies? You must show clearly how you got your answer.

14. 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)

15 Use your calculator to work out $\frac{\sqrt{4.1 \times 2.9}}{0.5 \times 19.6}$

Write down all the figures on your calculator display.

You must give your answer as a decimal.

(2)

16. The equation $x^3 + 4x^2 = 150$ has a solution between 4 and 5

Use a trial and improvement method to find this solution.

Give your answer correct to one decimal place.

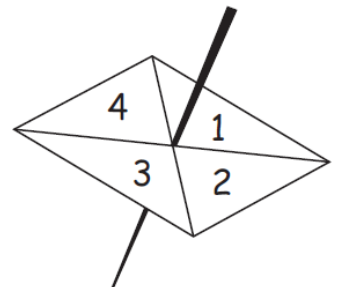
You must show ALL your working.

(4)

17. 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

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



Work out the probability that the spinner will land on 4

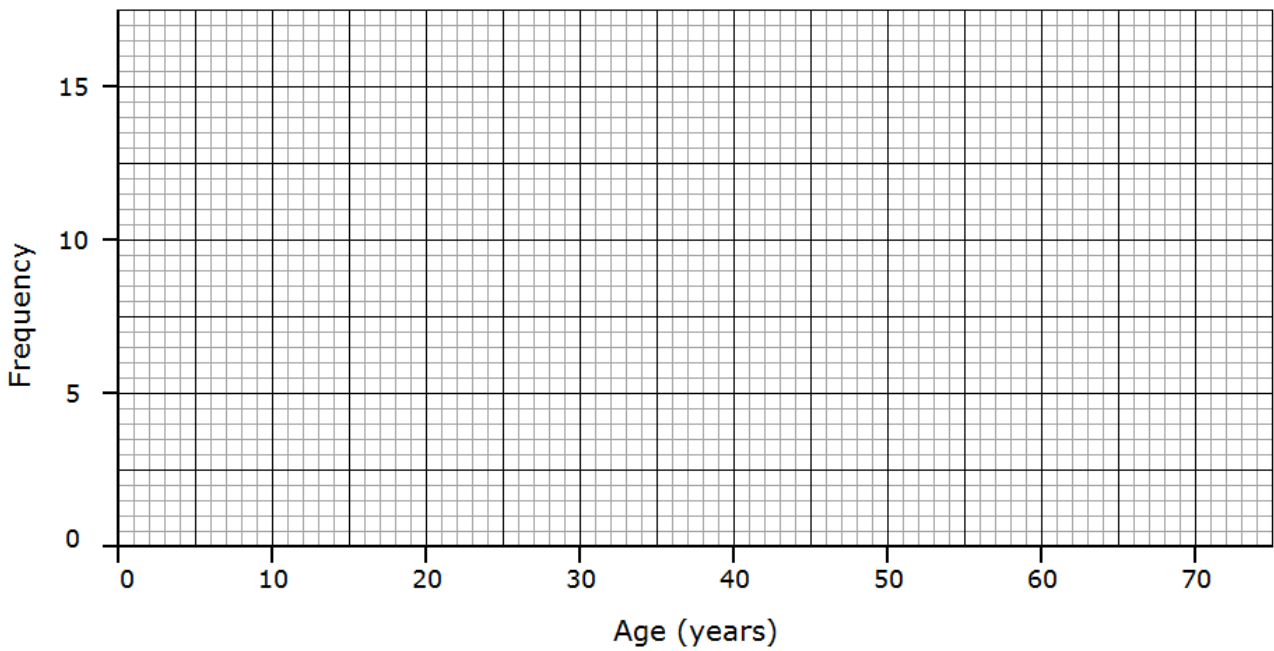
Number	1	2	3	4
Probability	0.2		0.1	

(2)

18. The table shows some information about the ages, in years, of 60 people.

Age (in years)	Frequency
0 to 9	6
10 to 19	13
20 to 29	12
30 to 39	9
40 to 49	7
50 to 59	3
60 to 69	10

On the grid, draw a frequency polygon for the information in the table.

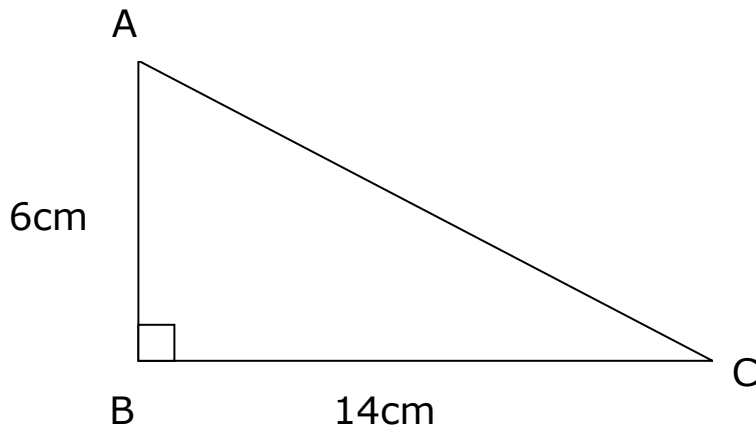


(2)

19. Solve $3(x - 2) = x + 7$

(3)

20.



ABC is a right-angle triangle.

$$AB = 6\text{cm}$$

$$BC = 14\text{cm}$$

(a) Work out the area of the triangle ABC .

_____ cm^2

(2)

(b) Calculate the length of AC .

Give your answer correct to 2 decimal places.

_____ cm

(3)

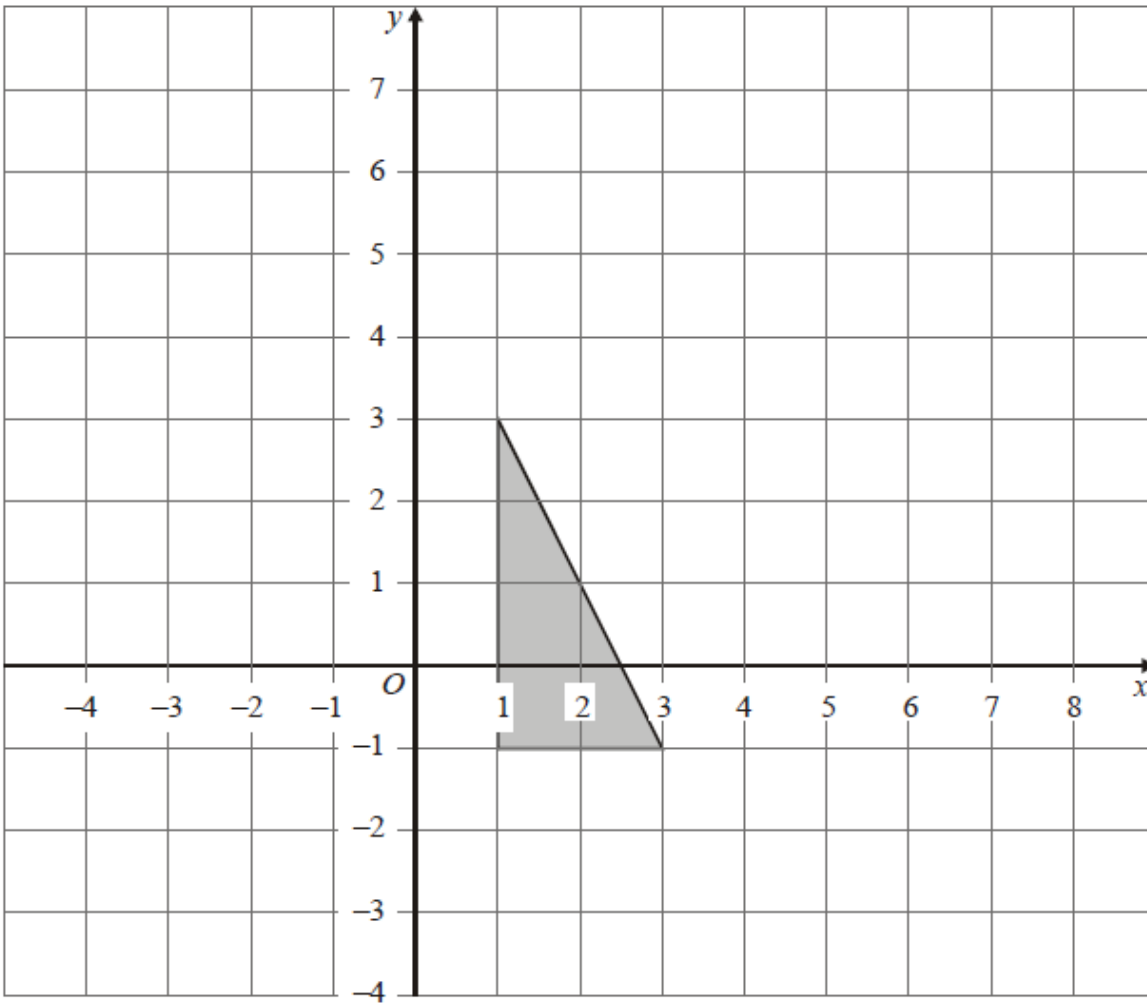
21. Here is a list of numbers.

12 19 12 15 11 15 12 13 17

Find the median.

(2)

22. Enlarge the shaded triangle by a scale factor 2, centre $(-1,1)$.

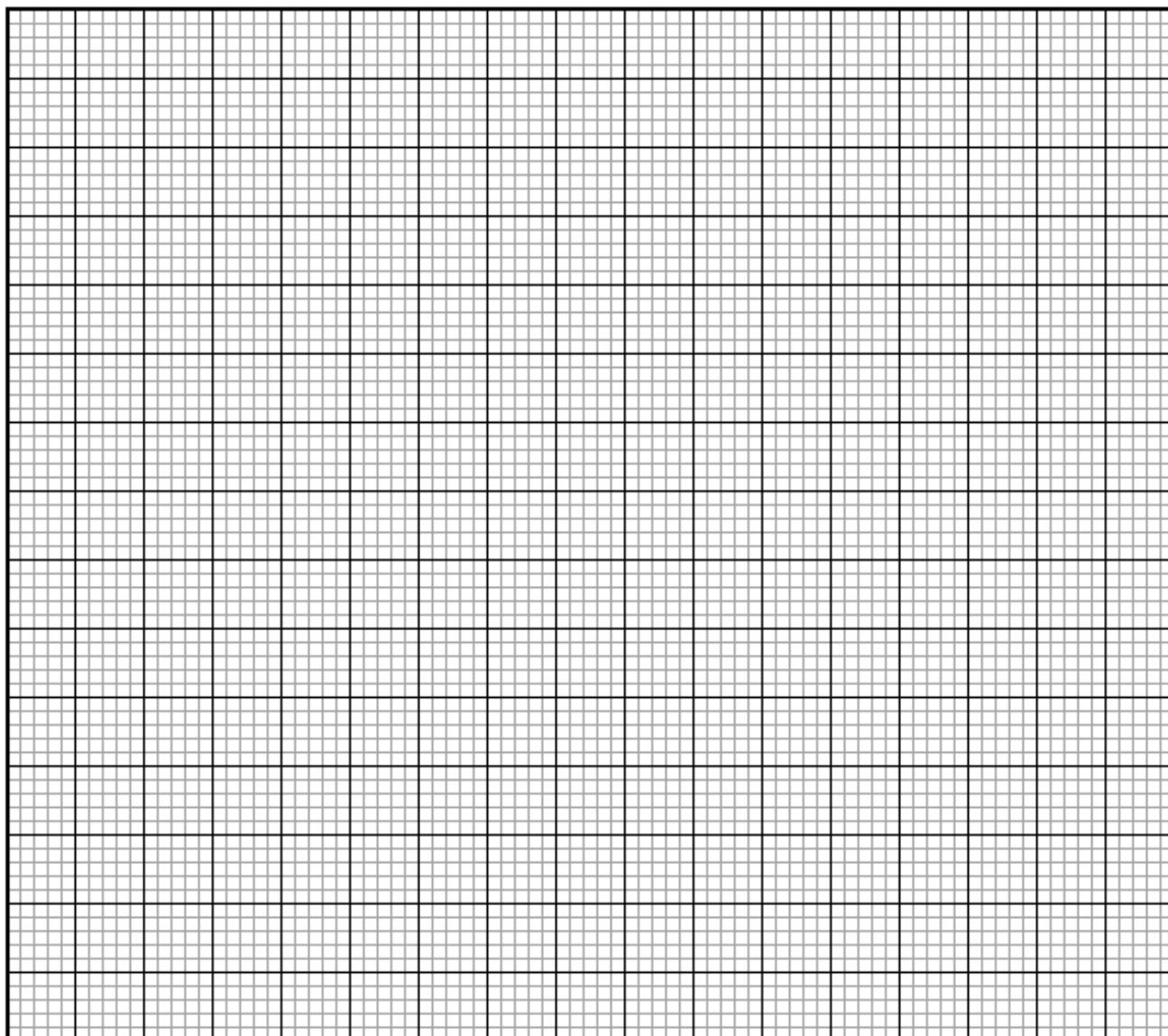


(3)

23. Expand and simply $5(y - 2) + 2(y - 3)$

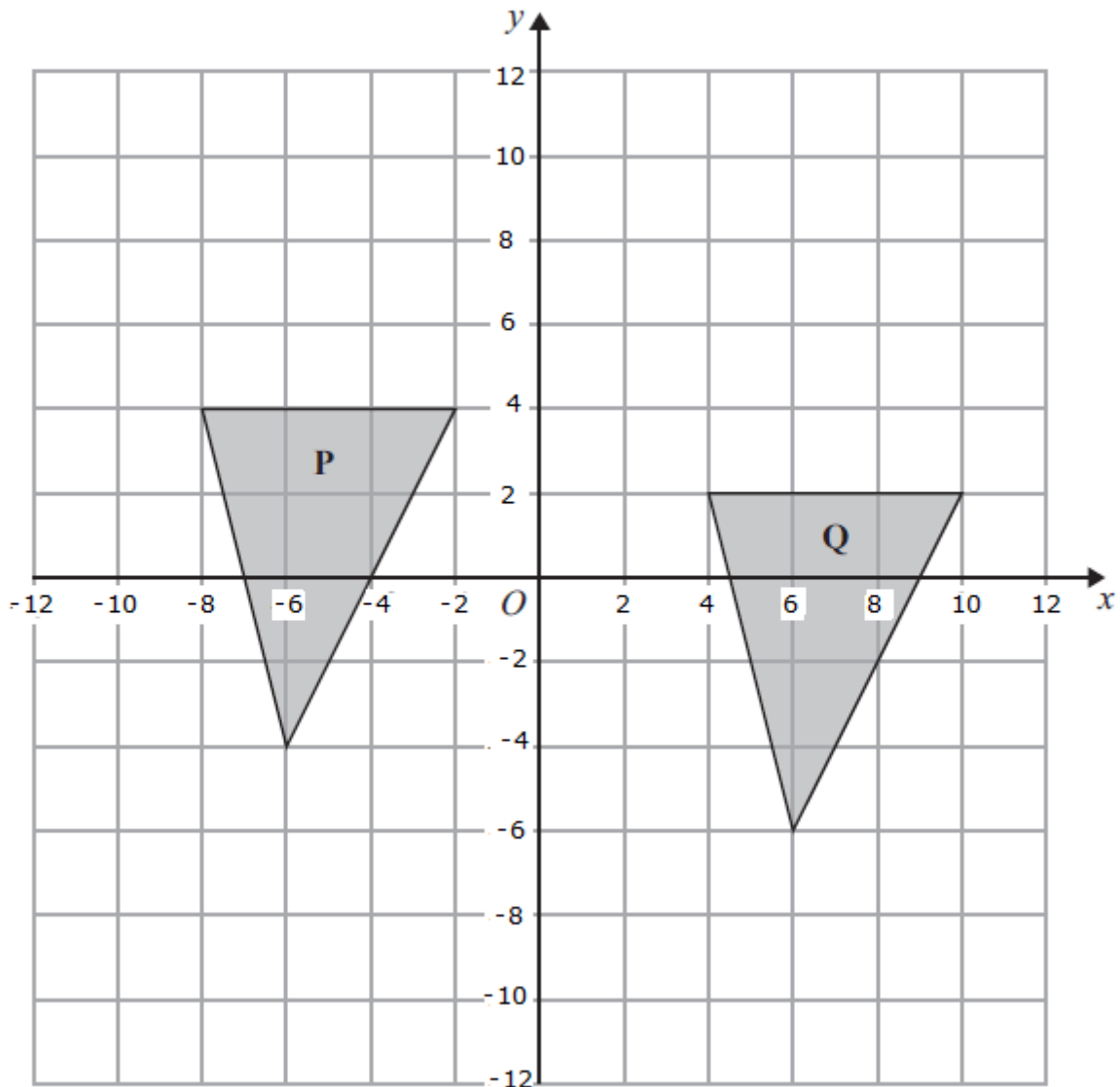
(2)

24. On the grid draw the graph of $y = 2x + 4$ for values of x from -2 to 5 .



(4)

25.



Describe fully the single transformation that maps triangle P onto triangle Q.

(2)

26. A factory makes 1500 cans per minute.

The factory makes cans for 8 hours each day.

Each can is filled with 330 ml of cola.

How much cola is needed to fill all the cans that are made each day? Give your answer in litres.

(3)

27. Jim's pay is £180 each week.
Jim asks his boss for an increase of £20 a week.
Jim's boss offers him a 10% increase.
Is the offer from Jim's boss more than Jim asked for?
You must show your working.

(3)

28. You can use this rule to work out the total charge for hiring a concrete mixer.

$$\text{Total charge} = \text{£30 plus £8 each day}$$

Esme hired a concrete mixer for 4 days.

(a) Work out the total charge.

£

(2)

William also hired a concrete mixer.

The total charge was £110

(b) Work out how many days William hired the concrete mixer for.

..... days

(3)

29. (a) Complete this table Write a sensible unit for each measurement..

	Metric	Imperial
Diameter of a football	inches
Amount of fuel in a car fuel tank	litres

(2)

(b) (i) Change 4 kg to grams.

..... grams

(ii) Change 3500 ml to litres.

..... litres

(2)

30. The table gives information about the costs of posting parcels.

Maximum weight of a parcel	Cost
2 kg	£4.41
4 kg	£7.06
6 kg	£9.58
8 kg	£11.74
10 kg	£12.61
20 kg	£14.69

He has to post

3 parcels with a weight of 6 kg each

1 parcel with a weight of 10 kg

1 parcel with a weight of 3 kg

1 parcel with a weight of 1.2 kg

Umar has £55 to spend on posting the parcels.

Can he post all the parcels?

(4)

31. Here is a diagram of a wall.

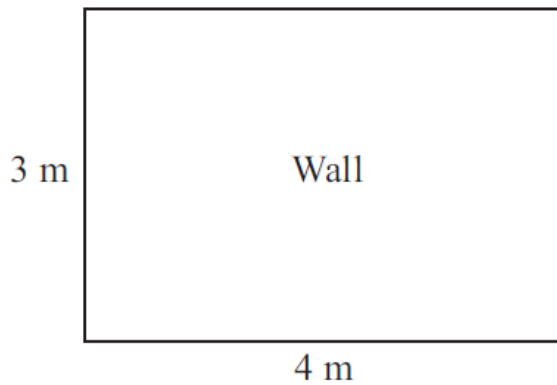
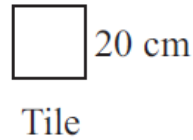


Diagram **NOT**
accurately drawn



Halima wants to cover all of the wall with tiles.

The tiles are squares with sides of length 20 cm.

The tiles are sold in packs.

There are 10 tiles in each pack.

Each pack of tiles costs £34.99

Halima only has £1000

Can she buy enough packs of tiles to cover the wall?

(6)