practice 1

Candidate Number:

MERCHANT TAYLORS' SCHOOLS

Mathematics Examination

Time allowed: 1 Hour

Calculators are **NOT** to be used.

DO NOT WRITE IN THESE BOXES

Question 1

Give the answers to the following sums

7 x 5 =		8 x 9 =	
6 x 9 =		12 x 7 =	
63 ÷ 7 =		24 ÷ 3 =	
108 ÷ 12 =		121 ÷ 11 =	

Question 2

Complete the following sums

45	+		=	120
	−	86	=	68
25	×	8	=	
500	÷		=	20

Question 3

Work out the following. You **must** show your working.

a) 539 + 687

Answer

b) 1223 - 874

Answer

c) 2004 - 586

Answer

Question 3 continued

Work out the following. You **must** show your working.

d) 436 × 6

Answer

e) 968 × 7

Answer

f) 39 × 27

Answer

Question 3 continued

Work out the following. You **must** show your working.

g) 3468 ÷ 4

Answer

h) 6102 ÷ 9

Answer

i) 3542 ÷ 14

Answer

Question 4

Below are some of the prices for packets of sweets from Carrie's local sweetshop.

Strawberry Chews	65p
Banana Gums	£1.25
Sour Surprises	£1.75

a) Carrie buys one packet of Strawberry Chews and two packets of Banana Gums. How much does she spend?

Answer

b) The next day, Carrie buys one packet of each type of sweet. How much change does she get from a five pound note?

Answer

c) Carrie's friend Jessie is buying some sweets for a party. She has a twenty pound note. How many packets of Sour Surprises can she buy?

Answer

Question 5

A school is planning a trip to the Museum of Mathematics. They plan on taking 50 pupils and 8 teachers.

The cost is made up of two parts - minibus hire and entrance to the museum.

A minibus costs £45 to hire and it will hold 15 passengers.

The museum charges an entrance fee of £8 for children and £15 for adults.

a) How many minibuses will be needed for the trip?

Answer

b) What is the TOTAL cost for the trip?

Answer

c) The total cost for the trip is shared out equally between the **pupils**. How much will each pupil have to pay?

Answer

Question 6

Write the following numbers in words.

a) 83145

Answer

b) 50020

Answer

c) 3033003

Answer

Write the following numbers in digits

d) Eight thousand, two hundred and thirty four

Answer

e) Two hundred and three thousand

Answer

f) Four million, fifty thousand and six

Answer

Question 7

Measure the length of this line to the nearest millimetre.

Answer [ ] mm

Question 8

Work out the following sums. You must show your working.

a) 12.7 + 6.53

Answer [ ]

b) 19.1 – 9.72

Answer [ ]

Question 9

Sally is at the train station and is looking at the clock. It is the **afternoon**.

Write down the time using:

a) 12 hour clock;

Answer

b) 24 hour clock.

Answer

c) Sally's train leaves in 5 minutes time and the journey takes 1 hour and 50 minutes. At what time does the train arrive at its destination? You may give your answer in either 12- or 24-hour clock.

Answer

d) The previous train left 45 minutes ago and arrives at 1705. How long did that journey take?

Answer

Question 10

The MT12 bus travels three times a day from London to Liverpool, stopping at Birmingham. Part of the timetable is shown below. All of the times are written using the 24 hour clock. Some of the times are missing for Bus 3.

	Bus 1	Bus 2	Bus 3
Departs London	0800	1020	1150
Arrives Oxford	0930	1150	
Departs Oxford	1010	1230	
Arrives Liverpool	1420	1640	

a) For how long does Bus 1 wait in Oxford?

Answer _____ minutes

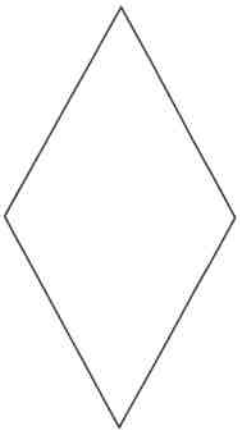
b) How long does the overall trip take for Bus 2 from London to Liverpool?

Answer _____hours _____ minutes

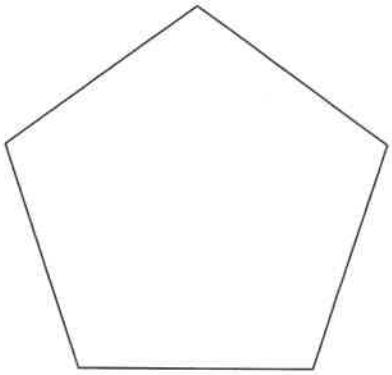
c) The three buses take the same amount of time for each part of the journey as each other. Fill in the missing times for Bus 3.

Question 11

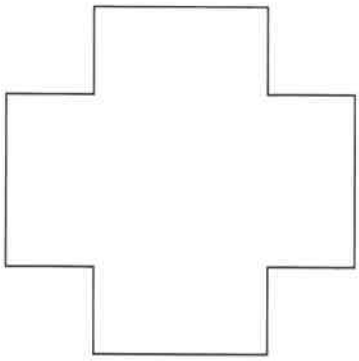
Draw **all** of the lines of symmetry on the following shapes.



RHOMBUS



REGULAR PENTAGON



CROSS

Question 12

A prime number is a number that is only divisible by 1 and itself. So the first prime numbers are 2, 3, 5, 7 and 11.

Write down all of the prime numbers between 40 and 50.

Answer

Question 13

a) The sum of two numbers is 40 and the difference is 10. What are the two numbers?

Answer

b) The sum of two numbers is 4 and the difference is 1. What are the two numbers?

Answer

Question 14

The latest CD from the pop group "The Irrationals" has twelve songs on it. Each song costs 99p to download from the internet. Alternatively, you could download the whole CD for £8.99

How much money do you save by purchasing the whole CD rather than buying all twelve tracks separately?

Answer £ _____

Question 15

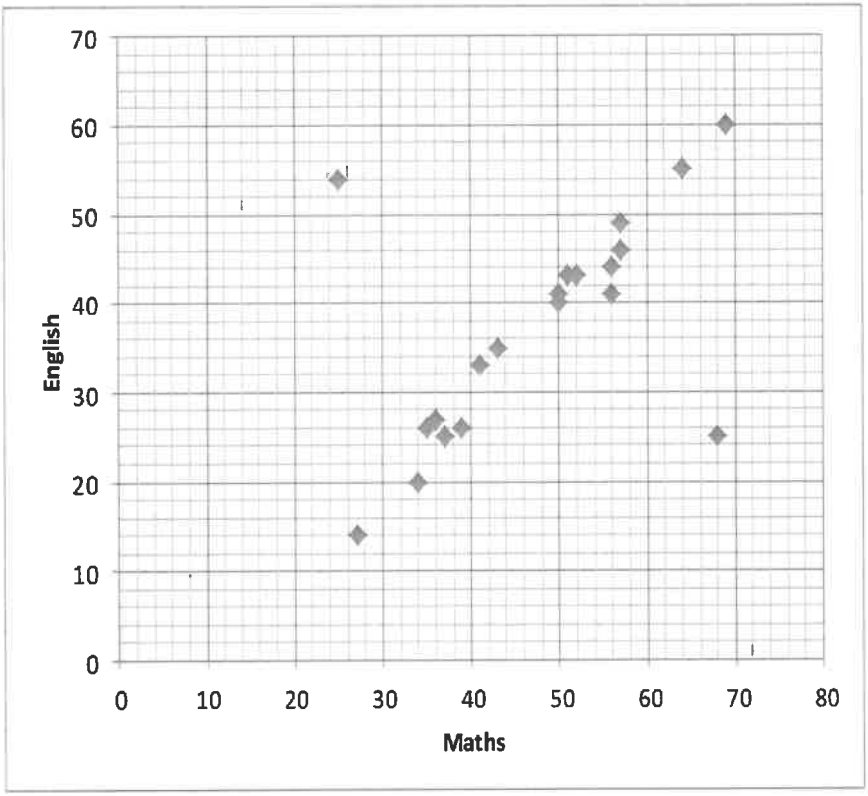
What is the difference between the smallest and largest of the following amounts?

$$\frac{1}{2} \text{ of } 30;\ \frac{1}{3} \text{ of } 36;\ \frac{1}{4} \text{ of } 40;\ \frac{1}{5} \text{ of } 60;\ \frac{1}{6} \text{ of } 96$$

Answer

Question 16

Twenty students sit examinations in Maths and English. Their scores are plotted on the graph below.



a) Billy also takes the exams and obtains a score of 52 on the Maths exam and 62 on the English exam. Indicate Billy's scores on the graph with a cross.

b) Charlie is good at Maths but is not good at English. Circle the point on the graph that probably represents Charlie.

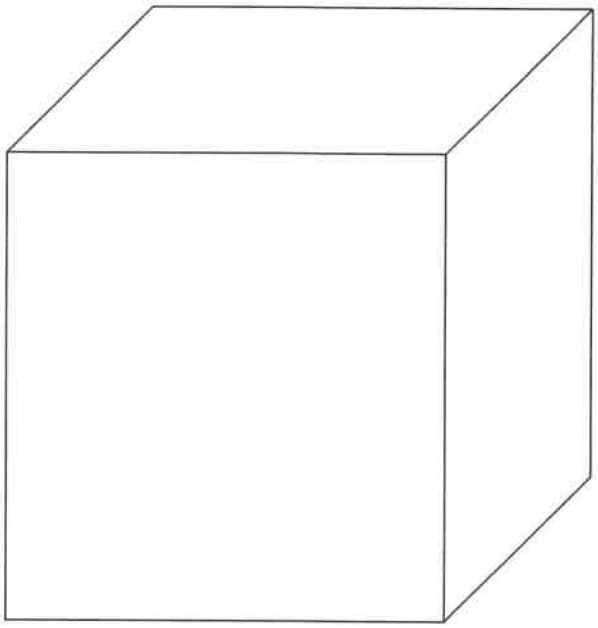
c) Henrietta obtains a score of 46 on the Maths exam. Using the graph, what score would you expect her to get in her English exam?

Answer

Question 17

A standard brick is 25 cm long, 15 cm wide and 10 cm high. They are packed in crates that are cubes with length, width and height 1.5 metres. How many bricks can be packed into such a crate?

NOT TO SCALE



Answer _____ bricks

Question 18

Sequences of numbers are made in the following way:

Double the first number and add 2 to get the second number
Double the second number and add 2 to get the third number
Double the third number and add 2 to get the fourth number, etc

So if the first number was 1, the sequence is

1, 4, 10, 22, 46, ...

a) Write down the first five numbers in the sequence that starts with 3.

Answer 3, _____ , _____ , _____ , _____

b) The **second** number of a sequence is 16. What was the first number?

Answer

c) The **third** number of a sequence is 16. What was the first number?

Answer

Question 19

Andover, Barnsley and Chester play each other in a football competition.

- Andover beat Barnsley 3 - 0.
- Barnsley and Chester drew their match.
- Andover scored two more goals than Chester in their match.
- Chester scored the same number of goals in each match.
- In the whole tournament, Andover scored twice as many goals as Barnsley.

Complete the results of the matches below.

Andover	3	-	0	Barnsley
Barnsley	___	-	___	Chester
Chester	___	-	___	Andover

Question 20

King George III became King of England on 25th October 1760. He reigned until his death for exactly 59 years and 96 days. What was the date of his death?

Answer

Question 21

Snow White decides to measure the Seven Dwarfs. Doc is 10 cm taller than Happy, who is 10cm taller than Dopey. Dopey, Sneezy, Bashful and Grumpy are all the same height. Sleepy is 80cm tall. Doc and Sleepy have the same combined height as Dopey and Sneezy. What is the total height of the seven dwarfs?

Answer

practice 2

Candidate No: _____

MERCHANT TAYLORS' SCHOOLS

MERCHANT TAYLORS' SCHOOLS

MATHEMATICS ENTRANCE EXAMINATION 2013

Time allowed: 1 Hour

Calculators are **NOT** to be used.

DO NOT WRITE IN THESE BOXES

Question 1

Give the answers to the following sums

4 x 12 =		7 x 7 =	
6 x 9 =		12 x 8 =	
64 ÷ 8 =		36 ÷ 4 =	
84 ÷ 7 =		42 ÷ 6 =	

Question 2

Complete the following sums

85	+		=	160
	−	57	=	75
35	×	6	=	
6000	÷		=	40

Question 3

Work out the following. You **must** show your working.

a) 794 + 987

Answer

b) 1283 - 491

Answer

c) 3001 - 1777

Answer

Question 3 continued

Work out the following. You **must** show your working.

d) 252 × 4

Answer

e) 879 × 6

Answer

f) 48 × 26

Answer

Question 3 continued

Work out the following. You **must** show your working.

g) 6715 ÷ 5

Answer

h) 5024 ÷ 8

Answer

i) 2862 ÷ 18

Answer

Question 4

Below are some of the prices per kilogram of various cheeses from Sophia's local cheese shop.

Cheddar	95p / kg
Stilton	£1.40 / kg
Brie	£2.65 / kg

a) Sophia buys 2 kg of cheddar and 3 kg of stilton. How much does she pay in total?

Answer

b) The next day, Sophia buys 5 kg of Brie. How much change does she get from a £20 note?

Answer

c) Stilton is sold in 1/2 kg packs. Sophia's mother sends her to the shop to buy as many packets of Stilton as possible with a £5 note.How many packets can buy?

Answer

Question 5

At the end of term, a school plans to take all of its students to a theme park. There are 600 people going on the trip in total.

The school considers using one of three coach companies.

Minicoaches offers coaches that hold 25 people and charge £100 per coach.

Comfybus offers coaches that hold 60 people and charge £250 per coach.

Megabus offers coaches that hold 80 people and charge £320 per coach.

How much would it cost to hire the coaches from each company?

Minicoaches	**£**
Comfybus	**£**
Megabus	**£**

Question 6

Write the following numbers in words.

a) 12345

Answer

b) 506070

Answer

c) 1010011

Answer

Write the following numbers in digits

d) Five thousand, two hundred and three

Answer

e) Eighty thousand and three

Answer

f) Ninety million, nine thousand and nine

Answer

Question 7

Measure the length of this line to the nearest millimetre.

Answer [ ] mm

Question 8

Work out the following sums. You must show your working.

a) 5.11 + 12.821

Answer [ ]

b) 5 - 0.22

Answer [ ]

Question 9

REMEMBER TO USE am OR pm IF NECESSARY

One afternoon, Eadie looks at her watch to see what the time is.

Write down the time, in digits, using:

a) 12 hour clock;

Answer

b) 24 hour clock.

Answer

c) Eadie left home to go shopping 45 minutes ago. At what time was this? Give your answer in either 12 hour or 24 hour clock.

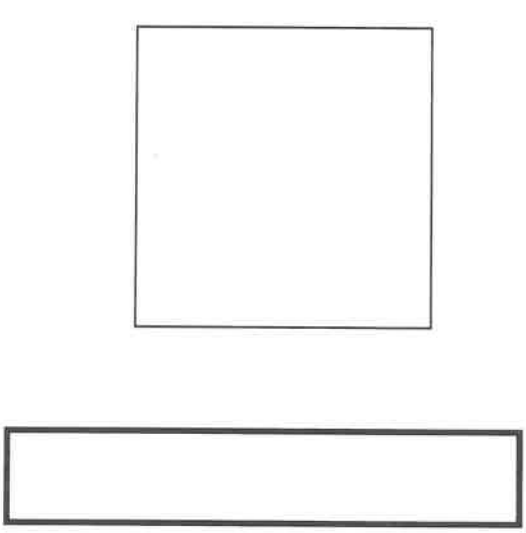
Answer

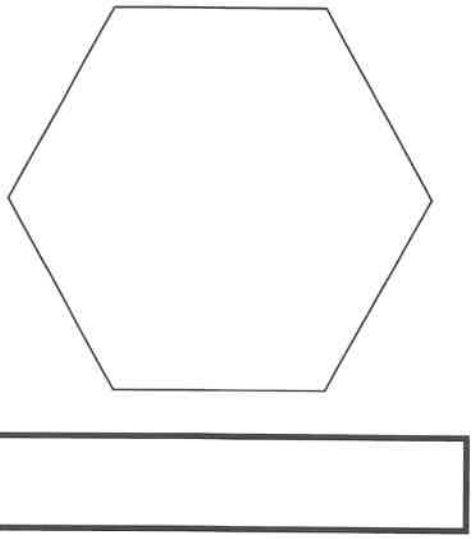
d) Eadie is going to see a film that starts at 16:20. How long does she have before the film starts?

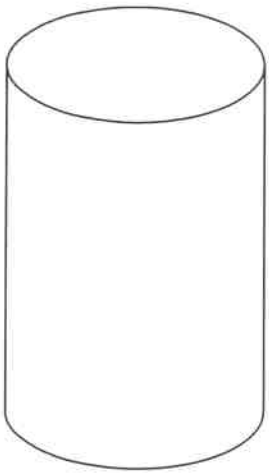
Answer _____ hours, _____ minutes

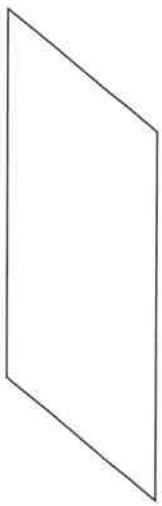
Question 10

Write down the mathematical name for the following shapes









Question 11

The graph on the page opposite shows how to convert amounts of money from their value in Pounds (£) to their equivalent value in Dollars ($). Use the graph to answer the following questions.

a) Bella changes £ 30 into dollars. How many dollars does she have?

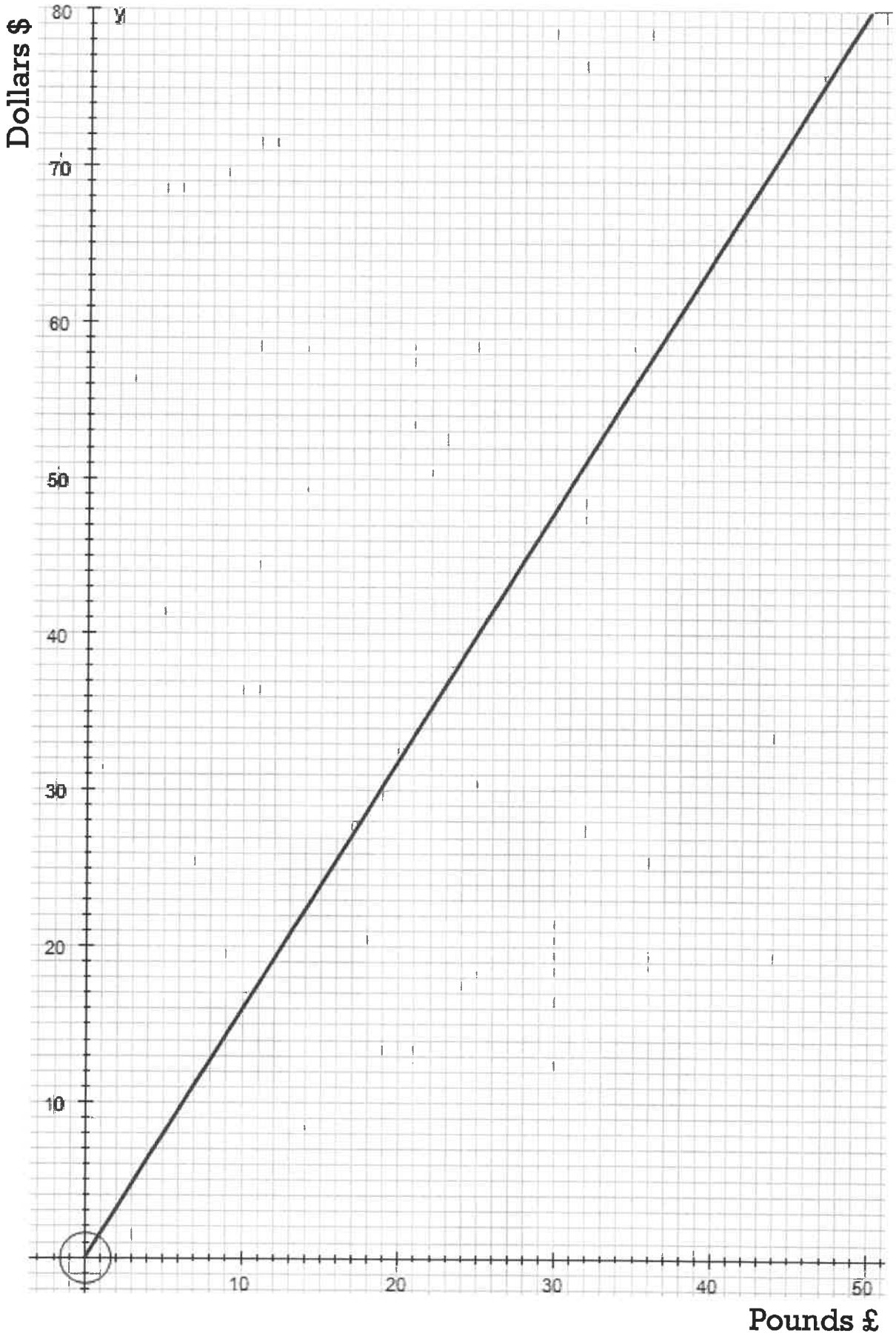
Answer

b) Charlotte changes $ 40 into pounds. How many pounds does she have?

Answer

b) Deirdre has £ 500 that she wants to turn into dollars. How many dollars will she receive?

Answer


Dollars $
80
70
60
50
40
30
20
10
10
20
30
40
50
Pounds £

Question 12

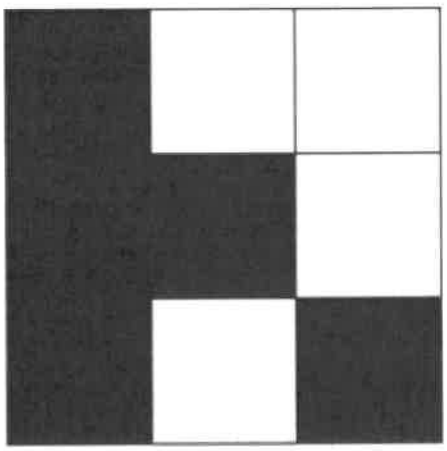
A prime number is a number that is only divisible by 1 and itself. So the first five prime numbers are 2, 3, 5, 7 and 11.

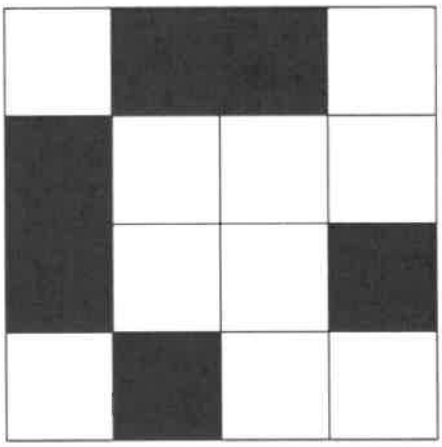
Write down all of the prime numbers between 30 and 40.

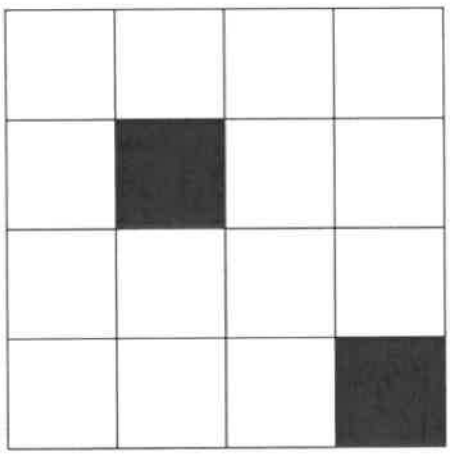
Answer

Question 13

In the diagrams below, shade **exactly two** squares in each diagram so that they each have at least two lines of symmetry







Question 14

Dr Barge wants to buy a set of 20 laptops for his Year 7 class. A single laptop costs £149.99, but he is offered a deal to buy 30 for £2,800. How much does he save by taking the deal?

Answer £ _____

Question 15

The table below shows the occupants of four different cages in the Ape House at the Merchants Zoo. A gorilla weighs 150 kg. A chimpanzee weighs 60 kg. An orangutan weighs 80 kg. A gibbon weighs 7 kg. The occupants of which cage weigh the **most** in total and how much do they weigh?

A	6 gorillas
B	16 chimpanzees
C	11 orangutans
D	135 gibbons

Answer Cage _____ , _____kg

Question 16

A group of students sit a Mathematics test.

a) Ellie scores 5 more than Emily, who scores 5 more than Esme. If their total score was 60, how much did **Esme** score?

Answer

b) Claudia scores twice as much as Vicky who scores twice as much as Jemima. If their total score was 98, how much did Jemima score?

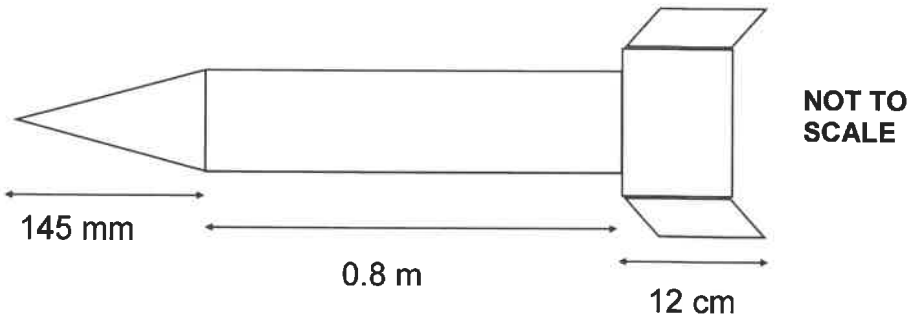
Answer

c) The mean score for Charlotte and Coco was 32. The mean score for Charlotte, Coco and Arya was 36. How much did Arya score?

Answer

Question 17

A model rocket is constructed out of three parts, each laid end to end. The nose cone is 145 mm long, the body is 0.8 m long and the base is 12 cm long. What is the total length of the rocket **in centimetres**?



Answer _____ cm

Question 18

The triangular numbers are formed as follows:

$$1 = 1$$
$$3 = 1 + 2$$
$$6 = 1 + 2 + 3$$
$$10 = 1 + 2 + 3 + 4,$$
$$\text{etc}$$

a) Write down the next two triangular numbers

Answer _____ , _____

b) The twentieth triangular number is 210. What is the twenty first triangular number?

Answer

c) The fortieth triangular number is 820. What is the thirty eighth triangular number?

Answer

Question 19

Kate, Roisin, Sammie and Lisa play a game.

They start with twenty cards, numbered from 1 to 20.

Kate takes all of the multiples of 5.

Roisin takes, from the remaining cards, all of the numbers that are factors of 60.

Sammie takes, from the remaining cards, all of the prime numbers.

Lisa takes all of the cards that are left.

a) What is the total of the numbers on Kate's cards?

Answer

b) How many cards does Roisin have?

Answer

c) What is the highest number on Lisa's cards?

Answer

Question 20

The date today is Monday 28th January 2013. When is the next year in which the 28th of January will fall on a Monday?

Answer

Question 21

Ellie pays £1.50 for 2 bananas and 3 apples. Beth pays £1.45 for 3 bananas and 2 apples. How much does Annabella pay for 1 banana and 1 apple?

Answer

practice 3

Candidate Number:

MERCHANT TAYLORS' SCHOOLS

Mathematics Examination

Time allowed: 1 Hour

Calculators are **NOT** to be used.

DO NOT WRITE IN THESE BOXES

Question 1

Give the answers to the following sums

9 x 4 =		11 x 6 =	
7 x 7 =		12 x 8 =	
108 ÷ 9 =		64 ÷ 8 =	
56 ÷ 7 =		54 ÷ 6 =	

Question 2

Complete the following sums

172	+		=	300
	−	150	=	350
40	×	50	=	
320	÷		=	40

Question 3

Work out the following. You **must** show your working.

a) 872 + 2965

Answer

b) 5678 - 4987

Answer

c) 93 × 4

Answer

Question 3 continued

Work out the following. You **must** show your working.

d) 32×23

Answer

e) $2345 \div 5$

Answer

f) $686 \div 14$

Answer

Question 3 continued

Work out the following. You **must** show your working.

g) 3.03 - 1.829

Answer

h) 8.32 × 5

Answer

i) 0.28 ÷ 8

Answer

Question 4

Write the following numbers in words.

a) 8093

Answer

b) 10203

Answer

c) 4040040

Answer

Write the following numbers in digits

d) Nineteen thousand and seventy three

Answer

e) Five hundred and one thousand, two hundred and five.

Answer

f) Eighty million, nine thousand and twelve

Answer

Question 5

Christine buys four video games.

- *Wizard Wars* is half the price of *Horses for Courses*.
- *Horses for Courses* costs £2 more than *Super Fred*.
- *Super Fred* costs three times as much as *Billy the Badger*.

If *Billy the Badger* costs £9, what are the prices of the other three games?

Answer:

Game	Price
Wizard Wars	
Horses for Courses	
Super Fred	

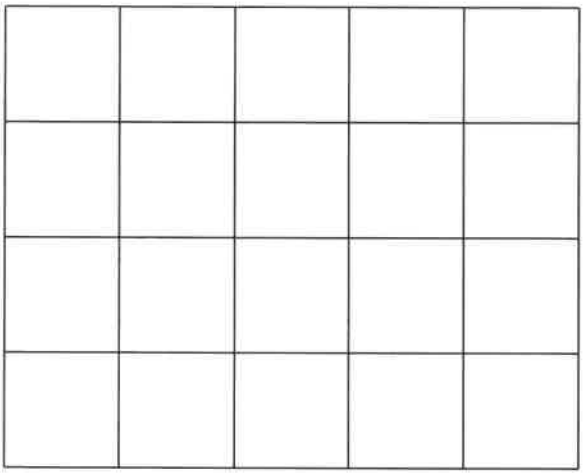
Question 6

Three trains travel from Liverpool to London, each taking different lengths of time. Complete the table below for the journeys.

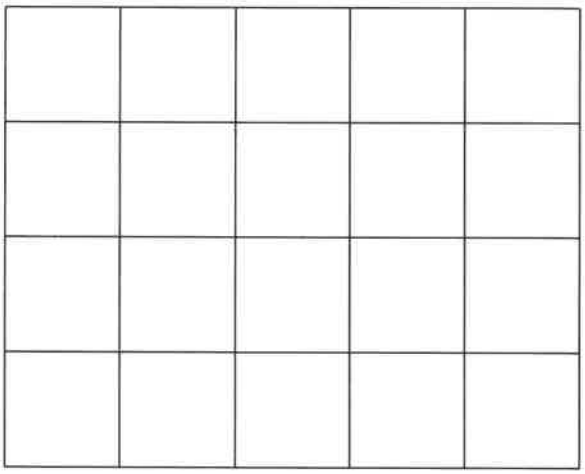
	Train 1	Train 2	Train 3
Departure Time	7:20 am	11:40 am	
Arrival Time	11:10 am		7:25 pm
Length of Journey		2 hours 50 minutes	3 hours 30 minutes

Question 7

a) Shade 3/4 of the shape below.



b) Shade 4/5 of the shape below.



c) Which is bigger, 3/4 or 4/5? Explain your answer.

Answer

because

Question 8

Below are the prices of different types of meat sold at a local butchers. The prices are all **per kilogram**. So, for example, 3 kg of lamb costs £42.00.

Meat	Price £/kg
Beef	£12.00
Pork	£8.50
Lamb	£14.00

a) Angela buys a joint of pork that weighs 2 kg. How much does she pay?

Answer

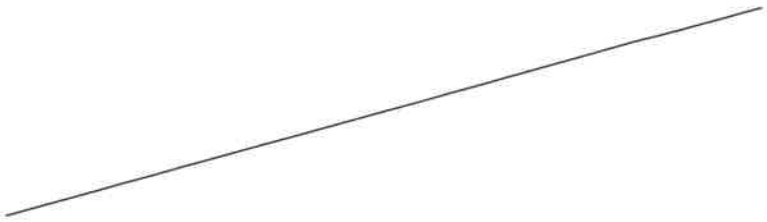
b) Sandra buys a joint of beef that weighs 1.5 kg. How much does she pay?

Answer

c) Steve can choose between a 2 kg joint of pork, a 1.5 kg joint of beef or a 1.2 kg joint of lamb. Which is cheapest? You must explain your answer.

Answer

Question 9



Measure this line to the nearest millimetre.

Answer [mm]

Question 10

a) Jane thinks of a number. She makes a second number by adding 2 to the first number. She multiplies the two numbers together and gets the answer 24. What was the first number that she thought of?

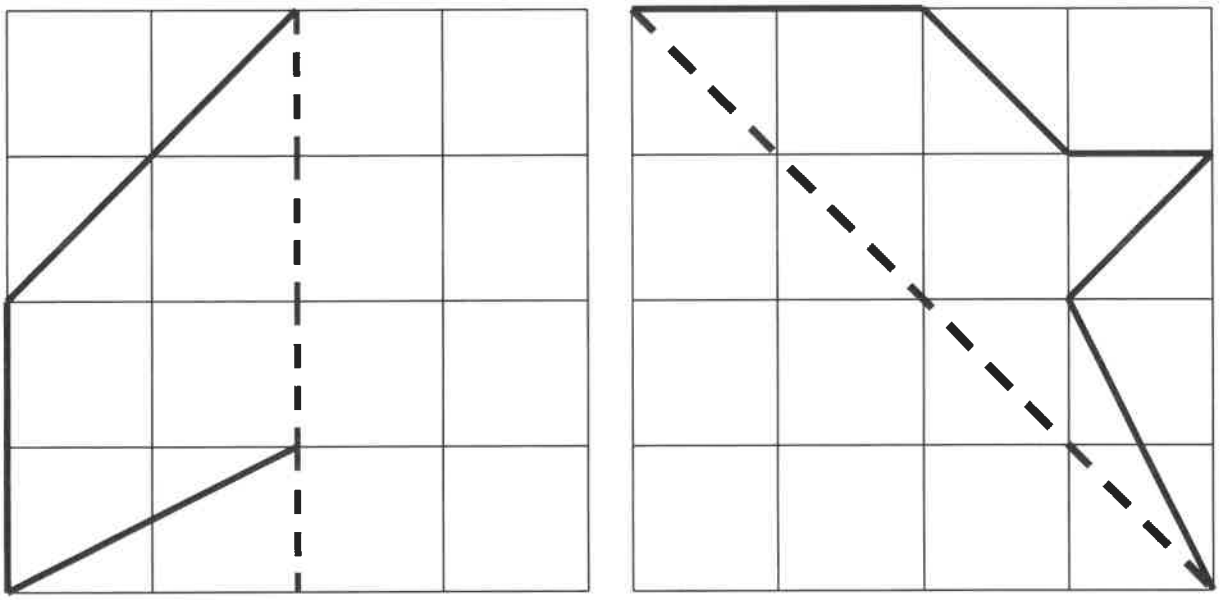
Answer [ ]

b) Marie thinks of a number. She makes a second number by doubling the first number and then adding 1 to it. She multiplies the two numbers together and gets the answer 36. What was the first number that she thought of?

Answer [ ]

Question 11

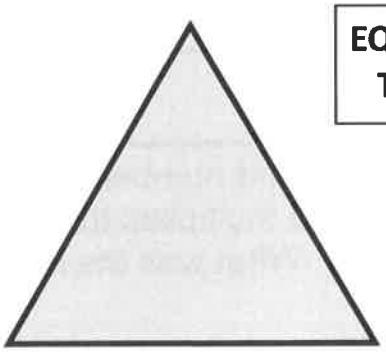
Complete the following diagrams so that the dotted line is a line of symmetry.



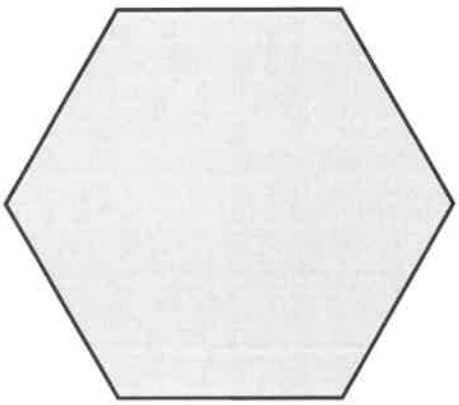
Question 12

Draw all of the lines of symmetry on the following shapes.

EQUILATERAL TRIANGLE

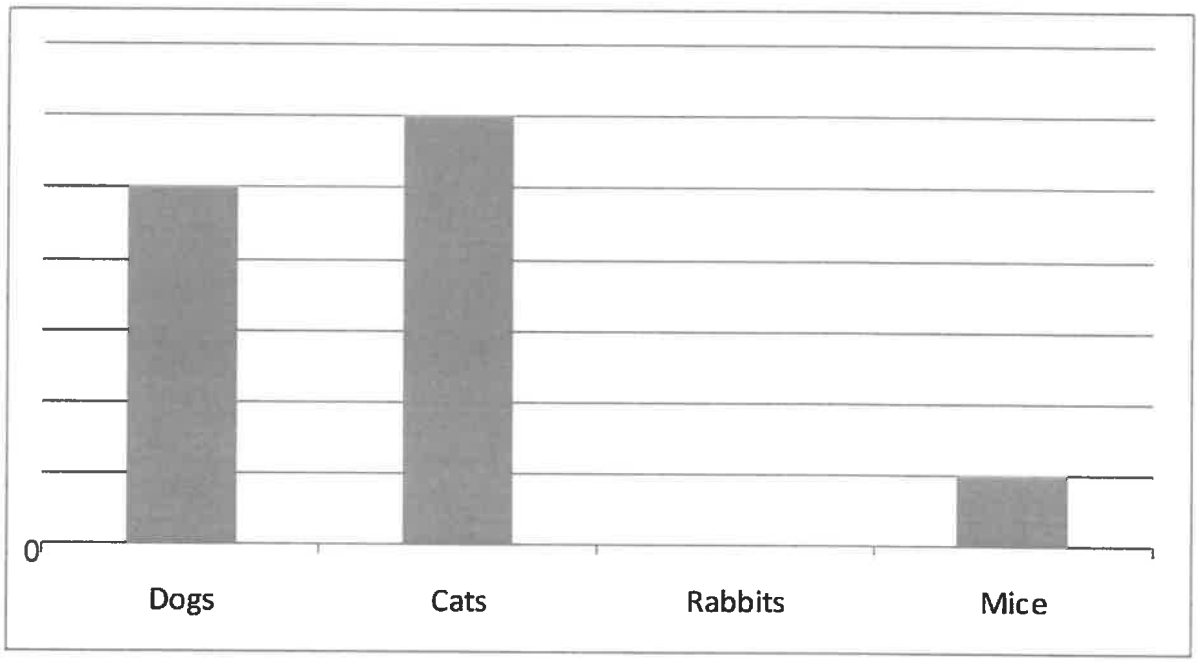


REGULAR HEXAGON



Question 13

The chart below shows part of the results when some Year 7 girls were asked what their favourite pet was. 10 girls said that they like dogs best.



a) Draw the scale on the bar-chart to show the number of people.

b) 6 girls liked rabbits best. Draw the bar for "Rabbits" on the diagram.

c) How many girls took part in the survey in total?

Answer

Question 14

A pizza restaurant charges a fixed amount for the pizza base with an additional charge for each topping. You can have as many toppings as you like.

Bases:	Deep Pan	£4.80
	Thin Crust	£3.60
	Stuffed Crust	£5.40
Toppings:	Extra cheese	£1.80
	Olives	£1.20
	Mushrooms	£0.60
	Pepperoni	£2.40

a) How much does a deep pan pizza with extra cheese and olives cost?

Answer

b) Jenna buys a pizza that costs £8.40. Describe what she might have bought.

Answer

c) Bridget's mum buys a lot of thin crust pizzas with extra cheese for a party. If she has £60 to spend, how many pizzas can she buy and how much change will she get from £60?

Answer _____ pizzas with £_____ change

d) Antonia works out the cost of her pizza as £7.00. Explain why Antonia MUST be wrong.

Question 15

Barry, Billy and Benny sit three Maths tests. Their scores in the first two tests are given below.

	Test 1	Test 2	Test 3
Barry	5	8	?
Benny	4	12	?
Billy	6	11	?

a) If the mode of Barry's scores was 8, what did he score in Test 3?

Answer

b) If the median of Benny's scores was 7, what did he score in Test 3?

Answer

c) If the mean of Billy's scores was 10, what did he score in Test 3?

Answer

d) What is the range of all of the nine scores?

Answer

Question 16

Put the following measurements in order from shortest to longest.

50000 mm	5m	0.5 km	5000m	50cm

SHORTEST				LONGEST

Question 17

Jessie, Bella and Carrie go shopping. Jessie buys two apples and an orange which cost her 40p. Bella buys one apple and two oranges, which cost her 35p. Carrie buys one apple and one orange. How much does she pay?

Answer

practice 4

Candidate Number:

MERCHANT TAYLORS' SCHOOLS

Mathematics Examination

Time allowed: 1 Hour

Calculators are **NOT** to be used.

DO NOT WRITE IN THESE BOXES

Question 1

Give the answers to the following sums

5 x 7 =		9 x 9 =	
6 x 8 =		11 x 12 =	
72 ÷ 8 =		36 ÷ 4 =	
84 ÷ 12 =		56 ÷ 8 =	

Question 2

Complete the following sums

37	+		=	100
	−	43	=	48
12	×	40	=	

Question 3

Starter		Main Course		Dessert	
Tomato Soup	£2.30	Steak and Chips	£7.90	Ice Cream	£3.40
Garlic Mushrooms	£2.80	Lasagne	£6.70	Fruit Salad	£3.20
Prawn Cocktail	£2.70	Veggie Burger	£6.10	Eclairs	£4.20

The menu of a small restaurant is printed above.

a) Jenny orders tomato soup, lasagne and fruit salad. How much does she pay in total?

Answer

b) Lizzie orders garlic mushrooms, lasagne and eclairs. She pays the bill with a £20 note. How much change does she receive?

Answer

c) The restaurant has an offer where you can get any three course meal (one starter, one main course and one dessert) for a total of £12. What is the largest amount of money that you could save using this offer?

Answer

Question 4

Work out the following. You **must** show your working.

a) 7002 − 2373

Answer

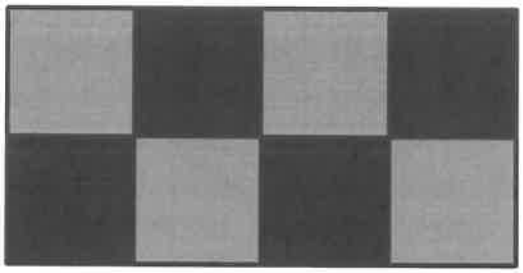
b) 744 ÷ 6

Answer

c) 89 × 7

Answer

Question 5



NOT TO SCALE

Sally wants to cover the floor of her living room with carpet tiles. Each tile is a square of side length 50cm and she wants to use grey and black tiles in an alternating pattern as above. Her living room is 10 metres long and 4 metres wide.
How many tiles of each colour will she need to cover the floor?

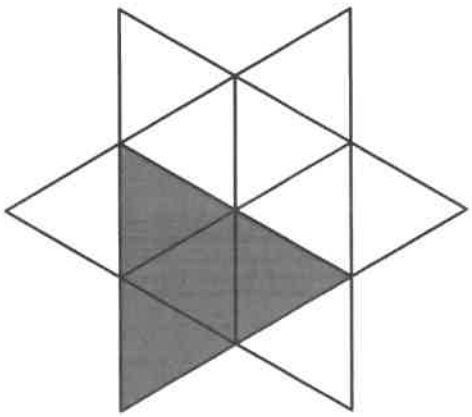
Show all of your working.

Answer

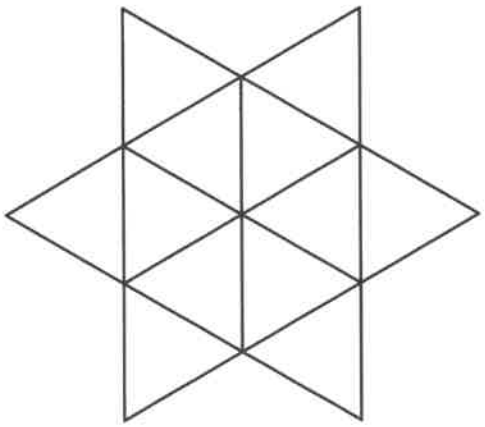
	black tiles and		grey tiles

Question 6

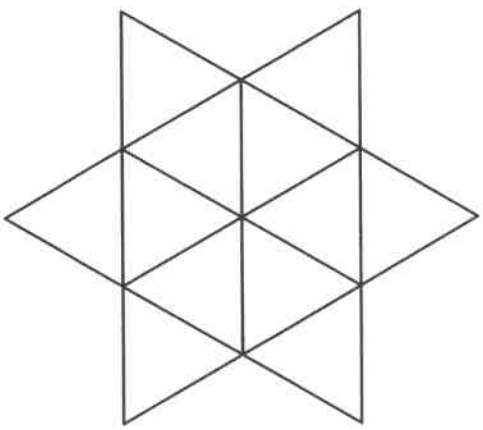
a) What fraction of the diagram below is shaded? Give your answer in its simplest possible form.



b) Shade five sixths of the diagram below.

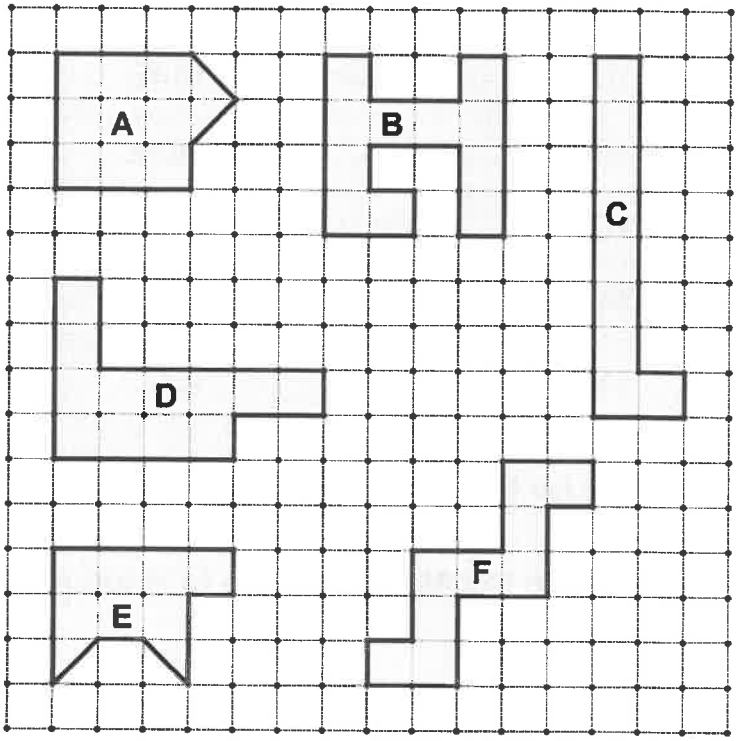


c) What fraction do you need to add to one quarter to make five sixths? You may use the diagram below if you wish.



Answer

Question 7



Scale:
1 square = 1cm

a) What is the area of shape A?

Answer ____ cm^2

b) Which shape has the largest area?

Answer ____

c) What is the perimeter of shape B?

Answer ____ cm

d) **Tick the box next to the correct statement:**

The perimeter of shape E is less than 14 cm	
The perimeter of shape E is 14cm	
The perimeter of shape E is greater than 14cm	

Question 8

Liverpool	1023	1234	1445	1803
Bootle	1046	1257	1508	1826
Crosby	1059	1310	1521	1839
Formby	1106	1317	1528	
Southport	1129	1340	1551	

Part of a bus timetable for the Liverpool to Southport bus is given above.

a) How long does it take to get from Bootle to Southport?

Answer

b) Jessie gets to the bus stop in Liverpool at half-past two in the afternoon. She is travelling to Formby to be picked up by her mother. If her mother arrives at the Formby bus stop at a quarter past three, how long will her mother have to wait?

Answer

c) The timetable is missing two times for the last bus.
Assuming all of the buses travel at the same speed, fill in the missing times in the timetable.

Question 9

Angela, Kirsty and Susie go into a sweet shop. Angela buys 3 bars of chocolate and 2 lollipops for a total of £1.83. Kirsty buys 3 lollipops for a total of 81p. Susie buys 2 bars of chocolate, 4 lollipops and 5 bags of toffees for a total of £5.29.

Complete the price list below.

Bar of Chocolate	p
Lollipop	p
Bag of Toffees	p

Question 10

Put **one** of the shapes from the table below into each of the spaces to complete the table showing how many lines of symmetry certain shapes have. Note three shapes will not be used.

POSSIBLE SHAPES	
Regular Pentagon	Rectangle
Square	Equilateral Triangle
Parallelogram	Regular Hexagon
Semicircle	Circle

Number of Lines of Symmetry	SHAPE
0	
1	
2	
3	
4	

Question 11

Work out the following sums. You must show your working.

a) 217.9 + 5.84

Answer

b) 31.24 − 2.958

Answer

Question 12

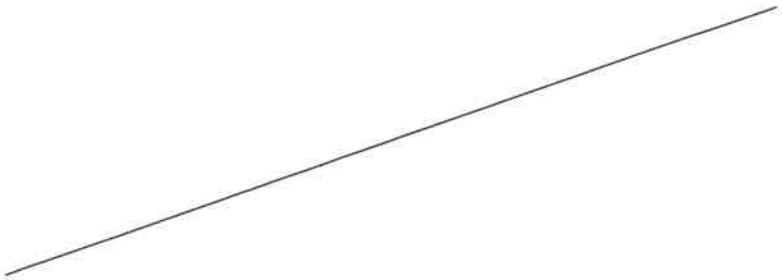
Freda has a large bag of coins, containing lots of 1p, 2p and 5p coins.
Using exactly 2 coins, she can make the following totals:

2p = 1p + 1p
3p = 1p + 2p
4p = 2p + 2p
6p = 1p + 5p
7p = 2p + 5p
10p = 5p + 5p

How many different totals can she make using exactly 3 coins?

Answer

Question 13

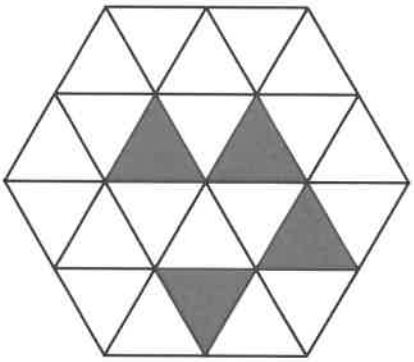


Measure this line to the nearest millimetre.

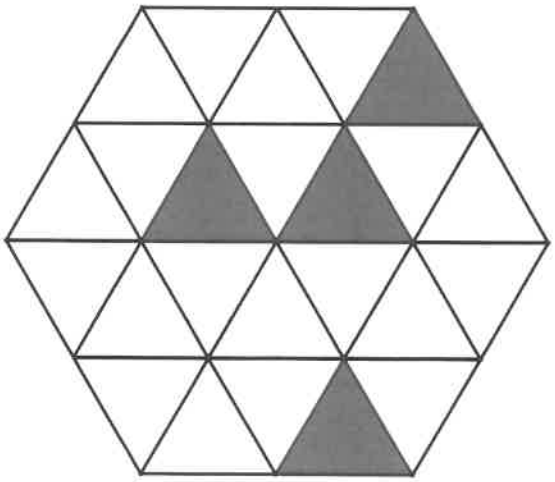
Answer ____ mm

Question 14

a) Shade one triangle so that the pattern below has exactly one line of symmetry.



b) Shade two triangles so that the pattern below has rotational symmetry of order 3.



Question 15

Five girls sit a times tables test and gain the following marks.

8, 5, 2, 3, 2

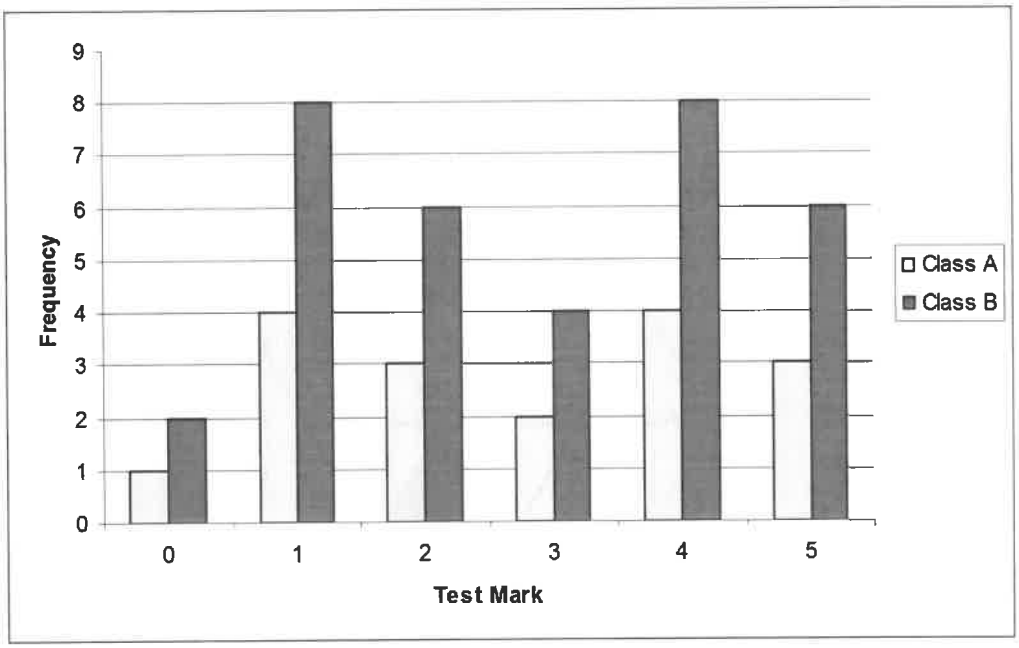
a) What is the mean of these marks?

Answer

b) What is the range of the marks?

Answer

The bar chart below shows the results in a different test (with a maximum mark of 5) for class A and class B.



c) How many children are there in class A?

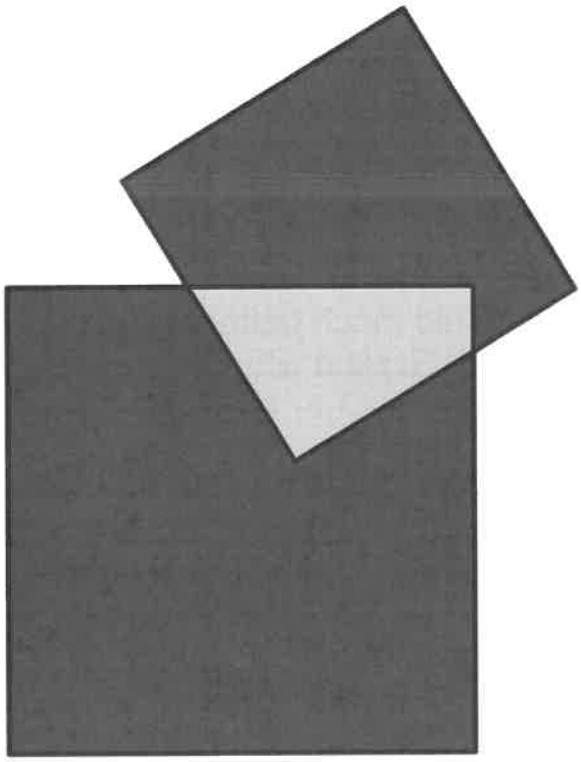
Answer

d) Dorothy says "Class B did much better than Class A because most of their bars are higher!" Explain why Dorothy is wrong.

Answer:

Question 16

The diagram below shows two overlapping squares.



The large square has side length 8 cm and the smaller square has side length 5 cm. If the grey area where they overlap is 12 cm^2, what is the total black area where the two squares do not overlap?

Answer ____ cm^2

Question 17

A sequence of numbers starts with 2, and has the rule for finding the next number by "double the previous number and then add seven".

a) Fill in the next number in the sequence;

2, 11, 29, _____

b) The number 569 is in the sequence. What is the next number after this?

Answer

c) The number 4601 is in the sequence. What is the number immediately before this?

Answer

Question 18

A greengrocer finds that 2 apples and an orange weigh the same as 4 oranges. If 4 apples and 5 oranges weigh 2.2 kg, how much does an orange weigh?

Answer

Question 19

Queen Elizabeth I was born on 7 September 1533 and died on 24 March 1603. What was her age when she died?

	years old

Question 20

Note that this question is harder than most of the others on the paper and should be attempted only when the rest are finished.

In a magic square, all rows, columns and main diagonals add up to the same amount. In the square below, each line adds up to 1. Fill in the rest of the square.

		$\frac{2}{5}$
$\frac{3}{5}$	$\frac{1}{3}$	

prachie 5

MERCHANT TAYLORS' SCHOOLS

Mathematics Examination

Time allowed: 1 Hour

Calculators are **NOT** to be used.

Question 1

Work out the following sums. You must show your working.

a) 2179 + 584

Answer

b) 3124 – 2958

Answer

c) 7002 – 4974

Answer

(6 marks)

Question 2

Work out the following. You must show your working.

a) 29×6

Answer

a) $312 \div 4$

Answer

(4 marks)

Question 3

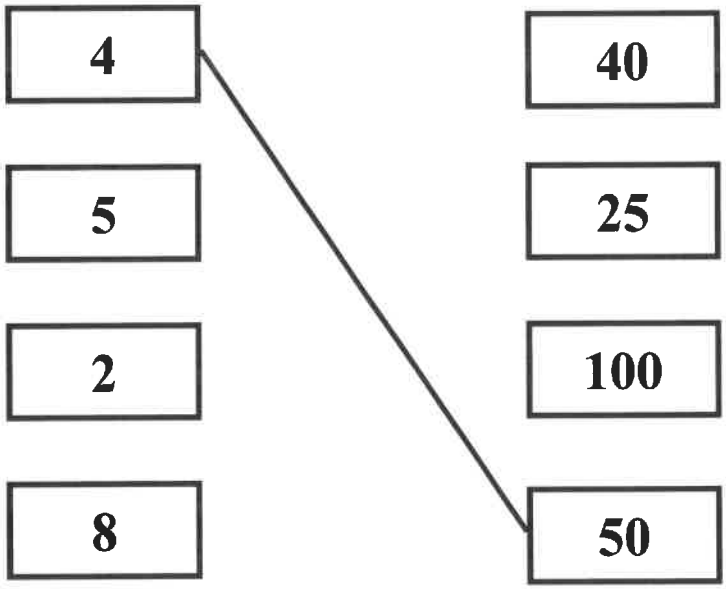
Fill in numbers into the table below so that each row, column and diagonal adds up to 30.

13		
6		
		7

(3 marks)

Question 4

Join with a line all of the pairs of numbers that multiply together to give the answer 200. One has been done for you.



(2 marks)

Question 5

Fill in the boxes to make the sums correct.

$\square + 17 = 51$

$\square - 17 = 51$

$\square \times 17 = 51$

(3 marks)

Question 6

Year 3 of a large primary school were going on a trip to the British Museum in London. There are 80 pupils on the trip, along with 6 teachers.

a) The pupils are to travel by minibus. Each minibus will hold 18 people. How many minibuses are needed?

Answer

b) The total cost of the trip is £640. How much does each pupil pay?

Answer

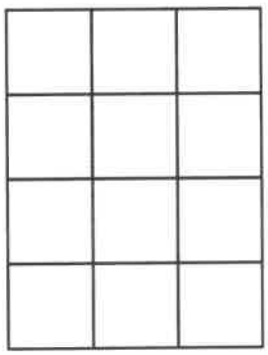
c) Entrance to the British Museum is £1.50 per child and £2.50 per adult. How much does the school need to pay for the total entrance fee?

Answer

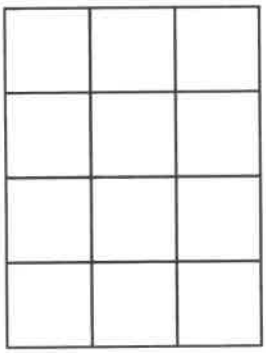
(4 marks)

Question 7

a) Shade one quarter of the diagram below.

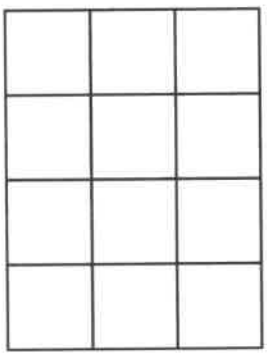


b) Shade two thirds of the diagram below.



c) Using your answers to a) and b), work out $\frac{1}{4} + \frac{2}{3}$

You may use the diagram below if you wish.



Answer

(4 marks)

Question 8

In a stationery shop, pencils cost 17p, pens cost 24p and rulers cost 30p.

a) How many pens can Simon buy with £2?

Answer

b) Mark buys one pen, one pencil and one ruler. How much change does he get from a one pound coin?

Answer

(4 marks)

Question 9

a) Write the number five hundred and ten thousand, six hundred and eight in figures.

Answer

b) Write the number 1 020 030 in words.

Answer

(2 marks)

Question 10

a) At midday on December 15th, the temperature was 13°C. At midnight, the temperature was −3°C. By how many degrees did the temperature fall?

Answer

b) At midday on December 16th, the temperature was 5°C. By midnight, the temperature had fallen by 12°C. What was the temperature at midnight?

Answer

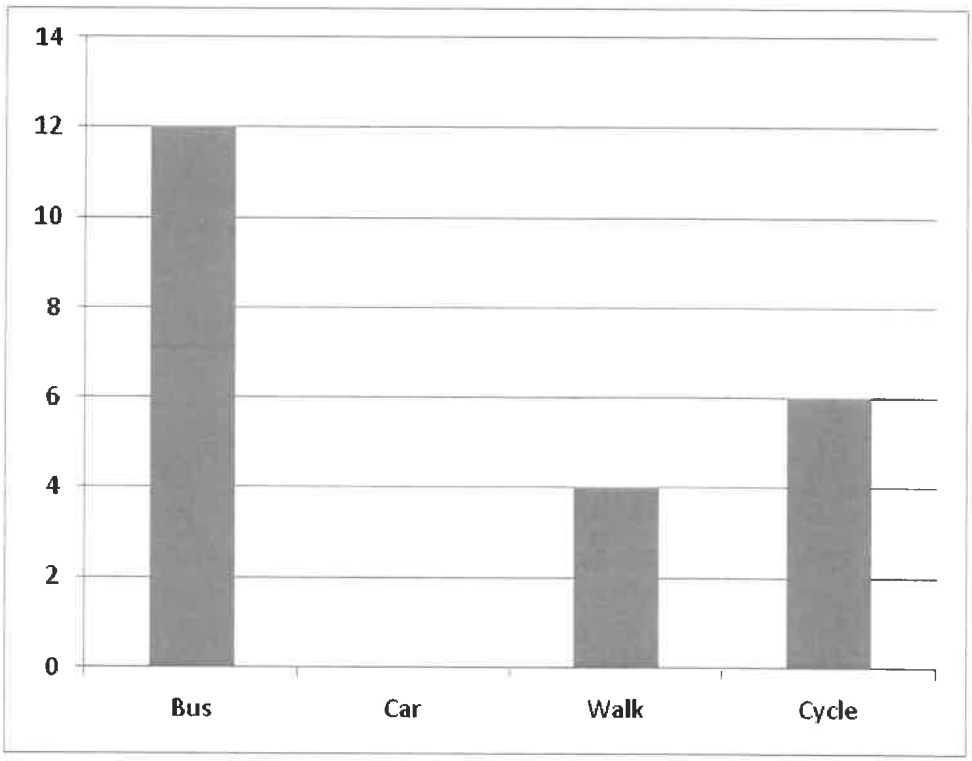
b) On December 17th in Iceland, the temperature fell from midday to midnight by 17°C. At midnight, the temperature was −23°C. What was the temperature at midday?

Answer

(3 marks)

Question 11

The bar-chart below shows how pupils from a class come to school in the morning. The bar representing pupils who came by car has not been filled in.



a) How pupils caught the bus?

Answer

b) How many more pupils cycled than walked?

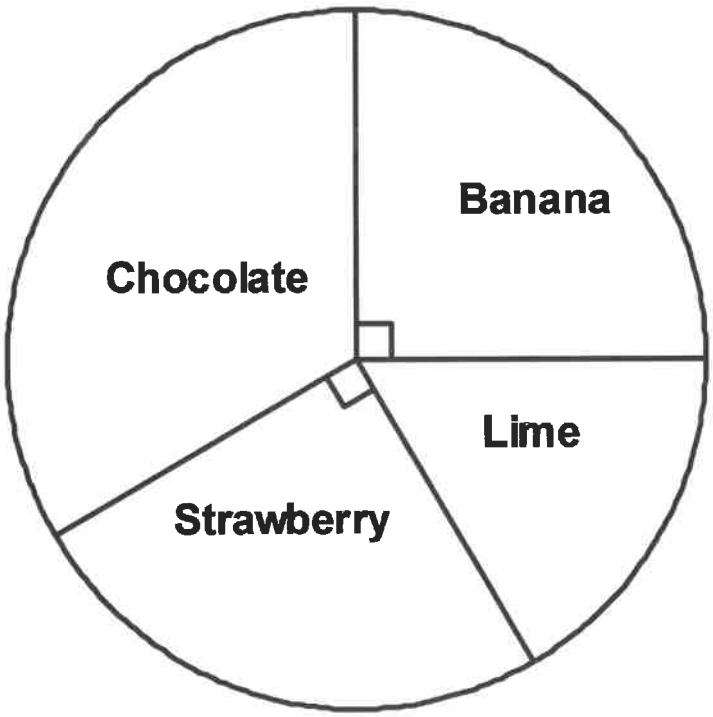
Answer

c) In total, there are 27 pupils in the class. The pupils who are not currently on the bar-chart all came by car. Draw a bar on the chart to represent these pupils.

(4 marks)

Question 12

A group of children were asked what their favourite milkshake flavour was. The results are shown on the pie-chart below.



Both the sectors relating to Banana and Strawberry flavours have angles of 90° at the centre.

a) What fraction of the children liked Strawberry the best?

Answer

b) The angle of the Lime sector was 60°. What was the angle of the Chocolate sector?

Answer

c) 25 children liked Lime best. How many children were asked in total?

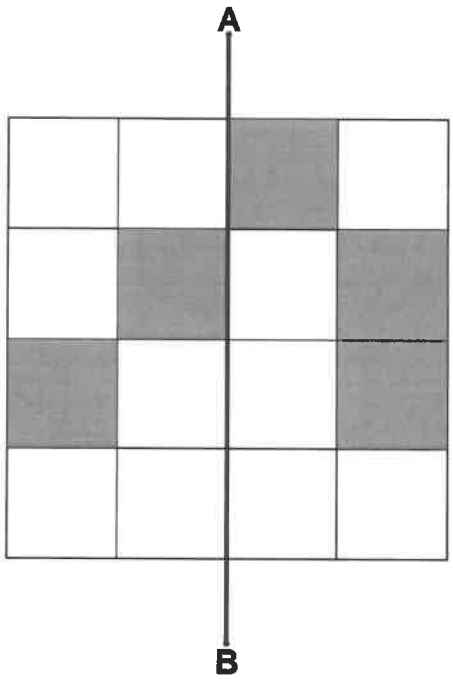
Answer

(4 marks)

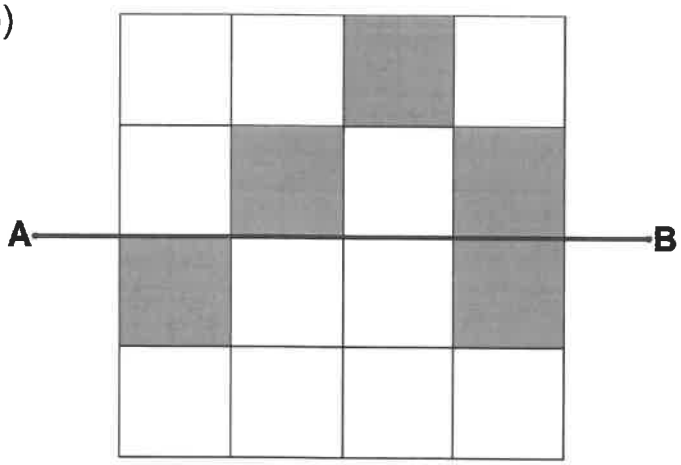
Question 13

In the diagrams below, shade as few squares as possible to make the line from A to B a line of symmetry.

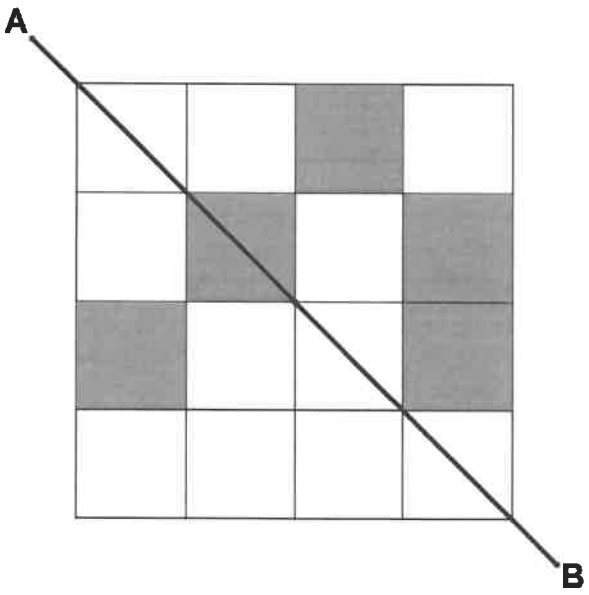
a)



b)



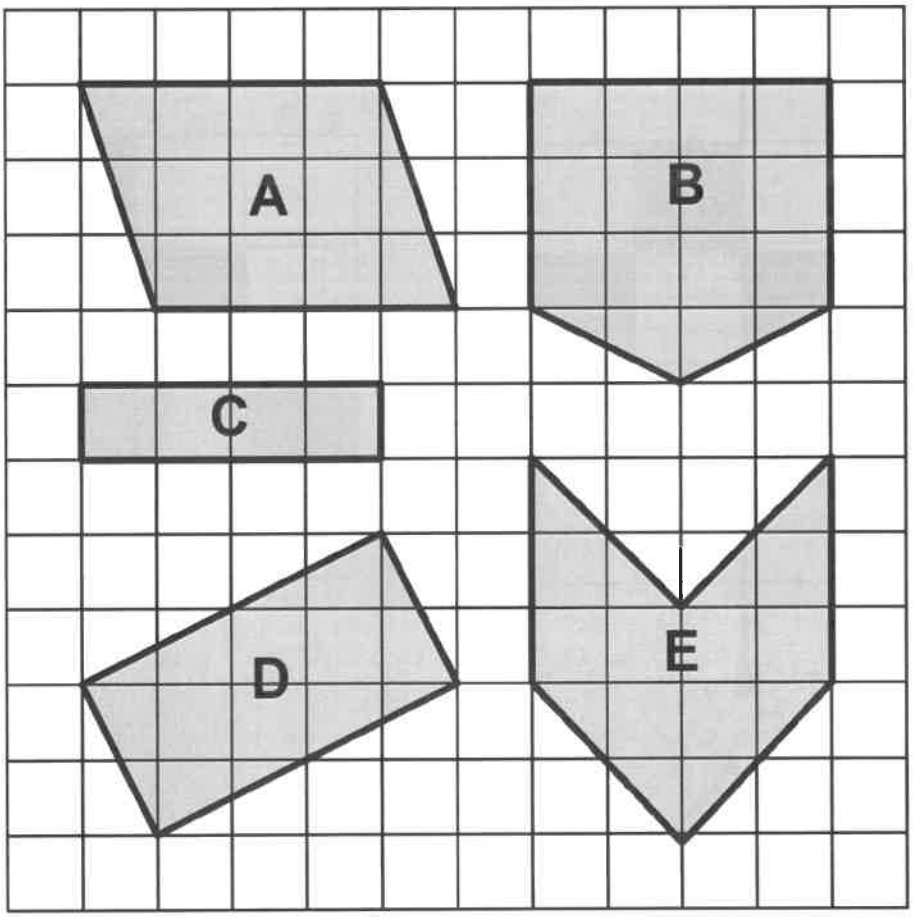
c)



(4 marks)

Question 14

Look at the shapes in the grid and then fill in the gaps in the sentences below.



a) Shapes _____ and _____ are both rectangles.

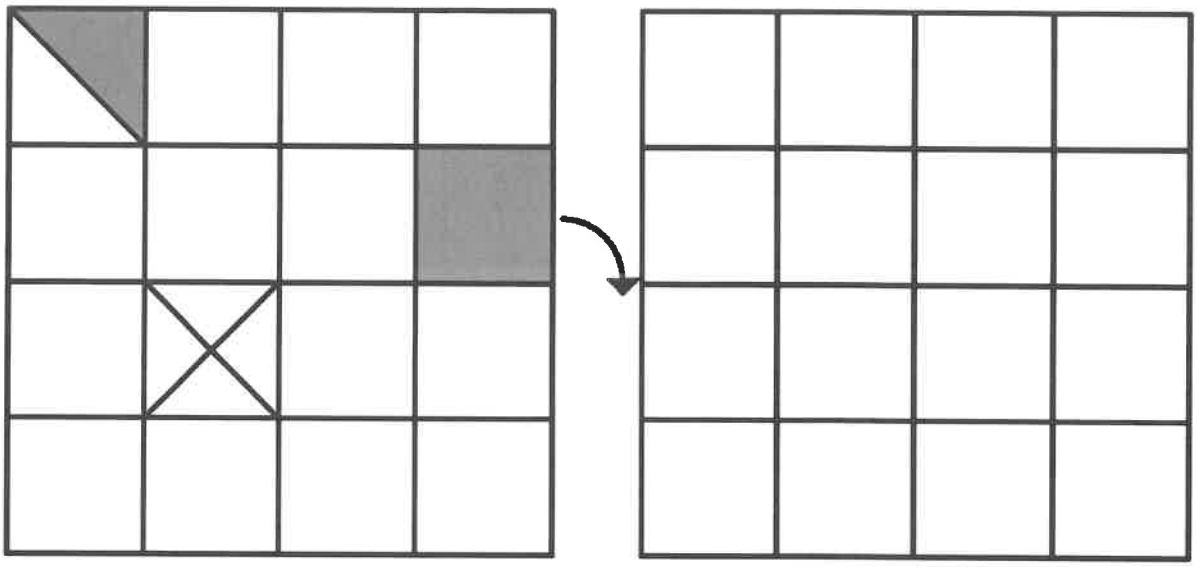
b) Shape _____ is a hexagon.

a) Shapes _____ and _____ both have the same area of 12 squares.

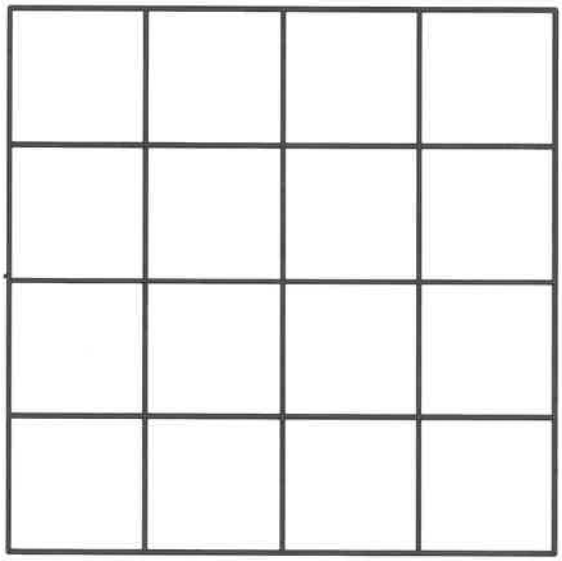
(3 marks)

Question 15

a) The pattern below is rotated 90° clockwise. Mark the grid with the pattern you would see after the rotation.



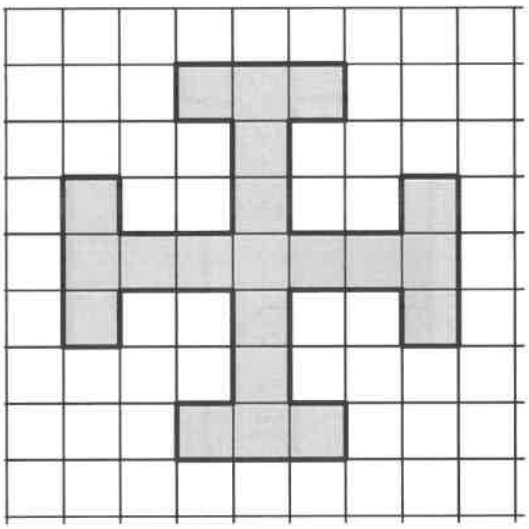
b) The answer to part a) is rotated another 90° clockwise. Mark the grid below with the pattern that you would obtain.



(4 marks)

Question 16

The cross below is drawn on squared paper. Each square has sides 1cm long.



a) What is the perimeter of the shape?

Answer

b) What is the area of the shape?

Answer

You must give the units for each answer.

(4 marks)

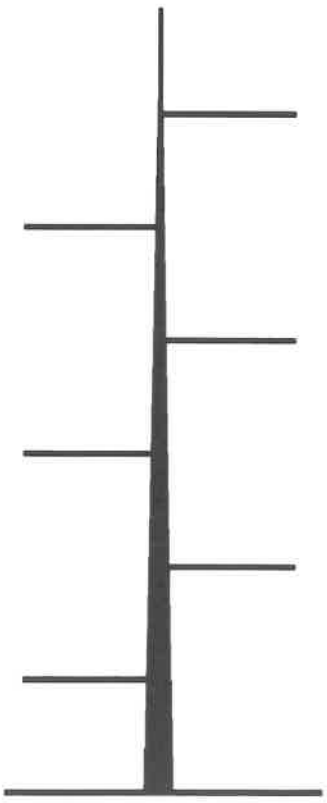
Question 17

In a forest, there is a tree with six branches. The lowest branch has one bird perched on it. On every branch above the first, there are twice as many birds on it as on the branch below (so on the second branch there are 2 birds.)

a) How many birds are on the top branch?

Answer

b) How many birds are in the tree in total?



Answer

(3 marks)

Question 18

a) I am a two-digit number.
My digits add up to 9.
I am in the 8 times table.
What am I?

Answer

b) I am a number between 10 and 30.
I am odd.
I am not in the 3 or 7 times tables.
I am not prime.
What am I?

Answer

c) I am a number between 50 and 60.
I have remainder 2 when divided by 3.
I have remainder 3 when divided by 4.
I have remainder 4 when divided by 5.
What am I?

Answer

(4 marks)

Question 19

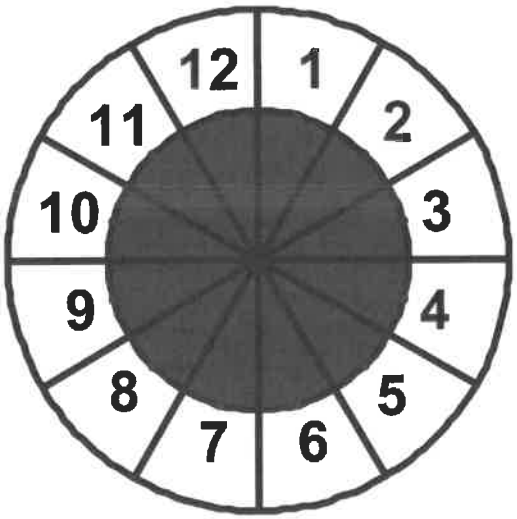
Fill in numbers into the table below so that the numbers in each row, column and diagonal ***multiply*** together to give 216.

		2
1		
	4	3

(4 marks)

Question 20

A spinner for a game consists of twelve equal-sized sectors, numbered from 1 to 12.



Place these events in order of how likely they are to happen, starting with the most likely and ending with the least likely.

A Scoring more than 7.

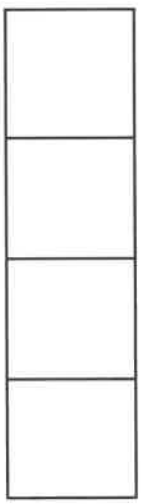
B Scoring less than 1.

C Scoring a multiple of 3.

D Scoring a factor of 12.

Answer

MOST LIKELY



LEAST LIKELY

(3 marks)