

ST GEORGE'S ASCOT

SAMPLE PAPER FOR ENTRY TO FIRST YEAR

MATHEMATICS

TIME: 1 hour

CALCULATORS MAY NOT BE USED

Please try to answer all the questions.
Show all your workings out on the paper.
Write your answer in the space provided.

The marks for each question are show in a bracket at the end e.g. [3]

Total marks: 100

1. Write in figures the following numbers

(a) four hundred and sixty seven

Answer

(b) one and three tenths

Answer

(c) eleven thousand six hundred and seven

Answer.....

(d) twenty four hundredths

Answer.....

(c) two and a half million

Answer.....

[5]

2. Here is a list of numbers:

10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39

From these numbers, choose

(a) two multiples of 7

Answer.....

(b) two factors of 48

Answer.....

(c) all the prime numbers less than 20

Answer.....

(d) a square number

Answer.....

[8]

3. (a) Sir George has 87 gold coins in his treasure box and 346 gold coins in his safety vault. How many gold coins is this altogether?

Answer.....

- (b) There are 152 children in Ascot Castle. If 79 of them are boys, how many are girls?

Answer.....

- (c) In his library, Sir George has 8 bookcases each with 65 magic books. How many magic books is this altogether?

Answer.....

- (d) 7 Knights share 959 golden coins equally between them. How many does each one get?

Answer.....

[12]

4. Lady Marian put six coins, with a total value of 87 pence, into the Maiden in Distress charity collection box. The first two she put in were a 5-pence coin and a 1-pence coin, what were the other four coins?
(There are 1-pence, 2-pence, 5-pence, 10-pence, 20-pence and 50-pence coins)

Answer.....
[2]

5. (a) Sir George is making "orange-fizz" drink for a party. He has 8 jugs, each of which holds $\frac{1}{2}$ litre of lemonade. How many litres is this in total?

Answer.....

- (b) He adds orange juice so that there is half as much orange juice as there is lemonade. How many litres of orange juice does he add?

Answer.....

- (c) How many litres of drink has he got altogether?

Answer.....

- (d) He fills twelve glasses that each holds 200 ml. How much orange-fizz has he left? (Remember: there are 1000 ml in 1 litre.)
Don't forget to state your units.

Answer.....

- (e) How many more 200 ml glasses can he fill?

Answer.....
[8]

6. The St George's Day Fair charges £5.00 for an adult and £2.50 for a child.

(a) Find the total cost for a family of two adults and three children.

Answer.....

(b) Lady Marian takes herself and some children to the St George's Day Fair. The total cost is £25.00. How many children does she take?

Answer.....

[6]

7. Dragon-burgers cost £2.40 per kilogram.

(a) How much will it cost to buy $2\frac{1}{2}$ kilograms?

Answer.....

(b) Sir George is having a feast. He buys £12 worth of the dragon-burgers. What weight does he buy?

Answer.....

[4]

8. (a) Sir George has 300 gold coins. If he gives away 5% to the Damsel in Distress Charity, how many gold coins is this?

Answer.....

- (b) In a dragon boat race there are 4 teams – Red, Green, Gold and Black. The probability that the Red team will win is 40%, the probability that the Green team will win is 20% and the probability that the Gold team will win is 25%. What is the probability that the Black team will win?

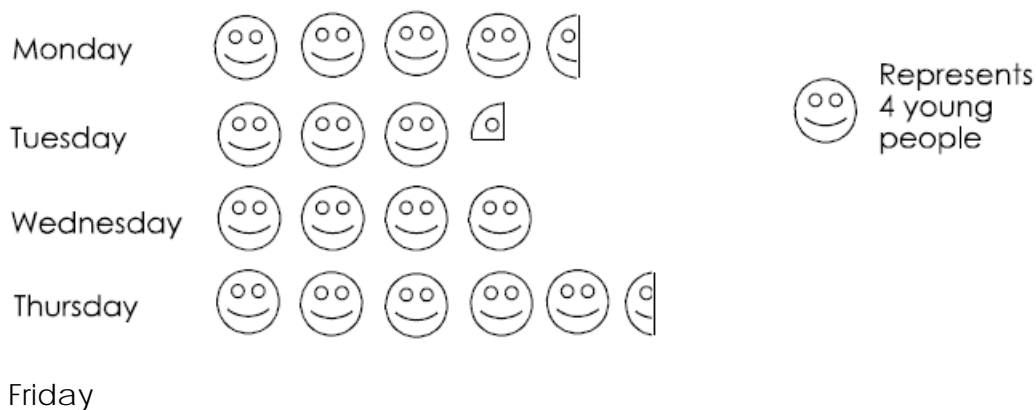
Answer.....

- (c) Merlin got $\frac{30}{40}$ for a spelling test. What is this mark as a percentage?

Answer.....

[6]

9. The picture graph below shows the number of young people who came to the Magic Club in Ascot Castle in one week.



(a) How many young people came to the Magic Club on Monday?

Answer.....

(b) On which day were there the most young people at the Magic Club?

Answer.....

(c) How many more young people were there in the Magic Club on Thursday than on Tuesday?

Answer.....

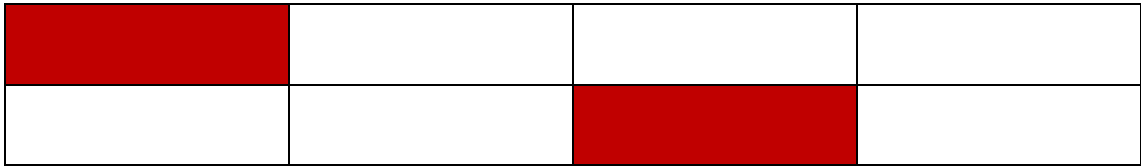
(d) On Thursday there were a total of 62 children in Ascot castle. How many did not go to the Magic Club?

Answer.....

(e) If 11 young people went to the Magic Club on Friday, complete the picture graph.

[7]

10. Sir George is designing a small tiling pattern using the shape below.



(a) What fraction of this shape has been shaded?

Answer.....

(b) Shade in half the remaining part.

(c) What fraction of the shape is now shaded altogether?

Answer.....

[3]

11. (a) Sir George was given a box of chocolates; $\frac{1}{4}$ of the box of chocolates were caramel ones and $\frac{2}{5}$ were strawberry ones. Sir George ate all the caramel chocolates and all the strawberry ones. What fraction of the box did he eat altogether?

Answer.....

(b) Merlin only eats red sweets. In a different box of sweets $\frac{7}{9}$ are red. He ate $\frac{2}{3}$ of the sweets in the box. What fraction of red sweets were left?

Answer.....

- (c) Sir George has a rectangular shaped garden that measures $\frac{5}{12}$ km wide by $\frac{8}{15}$ km long. What is its area?
Remember to simplify your answer so as not to confuse Sir George.

Answer.....

- (d) Sir George has 24 dragon pies. Some knights are each given $\frac{1}{4}$ of a pie. How many knights get fed?

Answer.....

[11]

12. Dragon eggs for the Castle tuck shop come in boxes of 20. I need 187 dragon eggs for a feast. How many boxes will I need to get?

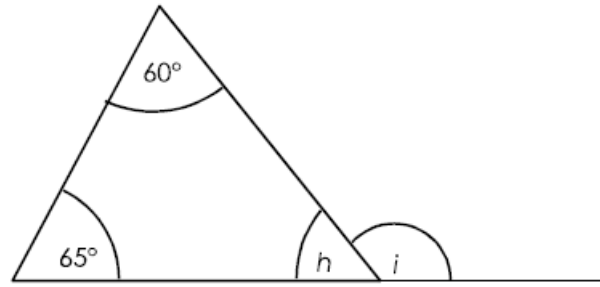
Answer.....

How many dragon eggs will I have left over?

Answer.....

[3]

13. Merlin has a magic sign: (NOT DRAWN TO SCALE IN THIS DIAGRAM)



(a) Calculate the size of the angle h .

Answer.....

(b) Calculate the size of the angle i .

Answer.....

[3]

14. Sir George arranged to meet Merlin by the dragon's den at 9.15 am.

(a) If Sir George arrived 20 minutes early, when did he get there?

Answer.....

(b) Merlin walked 2.5 km to get there and Sir George walked 1750 m. Who walked the further and by how many metres more?

Answer.....

[3]

15. Merlin has a magic number pattern as shown below:

$$\begin{aligned} 1^2 + 3 &= 4 \\ 2^2 + 5 &= 9 \\ 3^2 + 7 &= 16 \end{aligned}$$

(a) Write the next two lines of the pattern.

Answer.....
.....

(b) Complete this line:

$$10^2 + \dots = \dots$$

[5]

16. The table below shows how chocolate biscuits Sir George ate each day over 10 days.

Number of chocolate biscuits	5	6	7	8	9	10
Frequency (number of days)	2	1	0	4	1	2

(a) What was the range of the number of biscuits?

Answer.....

(b) On how many days did he eat 8 or more chocolate biscuits?

Answer.....

(c) How many biscuits did he eat altogether?

Answer.....

(d) What was his mean number of biscuits per day?

Answer.....

[5]

17. (a) Sir George thinks of his favourite number, doubles it then adds 5. If he gets 19, what number did he start with?

Answer.....

- (b) Merlin thinks of his lucky number, divides it by three and takes this from 20. If he gets 8, what number did he start with?

Answer.....

- (c) A magic mirror is in the shape of a rectangle. It has one side four times longer than the other. If its perimeter is 60 cm, what is its area?

Answer.....
[9]

END OF PAPER