REIGATE GRAMMAR SCHOOL

Entrance Examination

MATHEMATICS

January 2019

Time Allowed: 45 Minutes

SAMPLE

Name: .....

- This is a non-calculator paper
- Work through the paper carefully
- You do not have to finish everything
- Do not spend too much time on any single question
- **Show any working in the spaces provided**

Page	3	4	5	6	7	8	9	10	11	12	13	14	**Total**
Marks													
Available	7	9	9	9	8	10	10	9	10	10	5	4	**100**

1) In a school there are 386 boys, 435 girls, and 76 staff. How many people are there in the school?

.....[2]

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2) Write the number 'forty five thousand, seven hundred and two' in figures.

.....[1]

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3) A bookshelf holds 28 books. A local library has 87 bookshelves. How many books does the Library have?

.....[2]

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4) Put these numbers in order of size, starting with the LARGEST:

7.7, 7.77, 7, 7.07, 7.707

…… .....[2]

Largest Smallest

SAMPLE

5) A family with two adults and three children go to the Zoo. If an adult ticket costs £9.50 and a child ticket costs £2.60, how much change will they get if they pay with a £50 note?

.....[2]

6) What is the biggest number that divides into 16, 32, and 56?

.....[2]

7) A square has area 64cm^2. What is the perimeter of the square?

.....[2]

8) (a) What is 10% of £760?

.....[1]

(b) What is 15% of £760?

.....[2]

SAMPLE

9) (a) What is 0.4 written as a fraction in its lowest terms?

.....[1]

(b) What is 0.004 written as a fraction in its lowest terms?

.....[1]

(c) What is 0.404 written as a fraction in its lowest terms?

.....[1]

10) I have 6 blue counters and 4 red counters in a bag. What is the probability of choosing a red counter when I take a counter out of the bag?

.....[2]

11) (a) Write 55% as a fraction in its lowest terms.

.....[1]

(b) Write $\frac{3}{5}$ as a decimal.

.....[1]

12) Tina owed Josh £23.80. She paid him back with three £10 notes but he did not have any change. How much does Josh now owe Tina?

.....[2]

SAMPLE

13) The train from Brighton to London has 12 carriages and each carriage can hold 48 passengers. What is the largest number of passengers that can travel on the train?

.....[2]

14) Calculate:

(a) $\frac{3}{4} \times \frac{1}{6}$

.....[2]

(b) $\frac{3}{4} \div \frac{1}{6}$

.....[2]

15) Calculate $4\frac{2}{3} - 1\frac{1}{4}$

.....[3]

SAMPLE

16) Calculate $4\frac{3}{7} + 2\frac{5}{6}$

.....[2]

17) This multiplication has been worked out for you.

$$56 \times 134 = 7504$$

(a) Using the information given above, what is $7504 \div 56$?

.....[1]

(b) Using the information given above, what is 112×67

.....[1]

18) Write down the next two numbers in the sequence:

2, 5, 10, 17, ... , ...

[2]

19) I think of a number, multiply it by 5, then subtract 3. The result is 57. What was the number I first thought of?

.....[2]

SAMPLE

20) What are the missing numbers in the following calculations?

(a) $56 + \ldots\ldots\ldots = 93$

[1]

(b) $182 \div \ldots\ldots\ldots = 14$

[1]

(c) $(12 - \ldots\ldots\ldots) \times 12 = 96$

[1]

(d) $\frac{81-}{4} = 9$

[1]

21) Tasweer is making some cupcakes. It takes her 15 minutes to prepare the ingredients, the cakes take 18 minutes to bake and she needs to leave them for 10 minutes to cool down. If she wants to eat them at 3:15pm, what time should she start preparing the ingredients?

.....[3]

22) How many minutes are there in one day?

.....[3]

SAMPLE

23) Martin the builder needs to build a wall 19 bricks wide and 14 bricks high.

(a) How many bricks will there be in the wall?

.....[2]

(b) He can lay 7 bricks every 5 minutes. How long will it take him to build the wall?

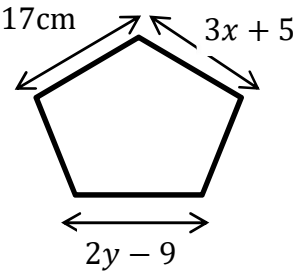
.....[2]

24) On January 1st, the temperature in Helsinki was -4°C and the temperature in Madrid was 12°C. The temperature in London was exactly half way between Helsinki and Madrid. What was the temperature in London?

..... [2]

25) The diagram shows a regular pentagon.

(a) Find the value of x.



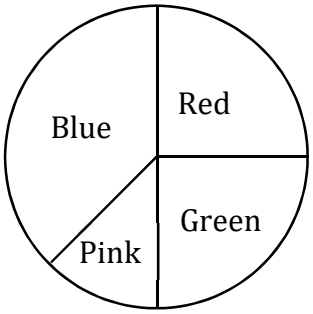
.....[2]

(b) Find the value of y.

.....[2]

SAMPLE

26) A class of 32 students vote on their favourite colour.
They then draw a pie chart to show their results.
The pie chart is shown on the right.



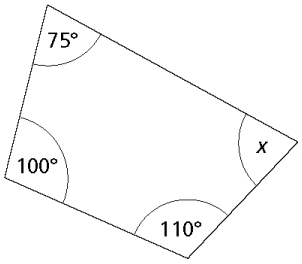
(a) How many students favourite colour is Green?

.....[1]

(b) How many students favourite colour is NOT Blue?

.....[2]

27) Find the value of x in the quadrilateral shown.



.....[3]

28) Julie and Sarika are doing a 24km sponsored walk.

(a) Julie can walk at 6km per hour. How long will she take to finish the walk?

.....[1]

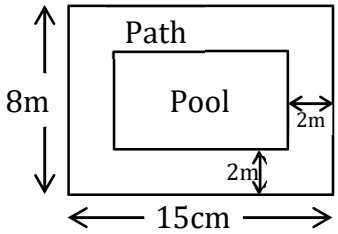
(b) Sarika can walk at 4km per hour. How far will she still have left to walk when Julie finishes?

.....[2]

SAMPLE

29) The plan on the right shows a garden. There is a 2m wide path around the edge of the garden, with a swimming pool inside the path.

Find the area of the path.



.....[3]

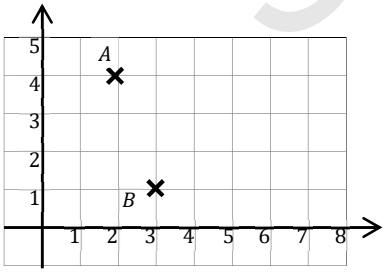
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30) Karen and Fran have some money. Karen has £9 more than Fran, together they have £45. How much money does Karen have?

.....[3]

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31) In the diagram below, the point A has coordinates (2,4).



(a) Write down the coordinates of point B.

.....[1]

(b) The point C has coordinates (6,2). Mark C on the diagram.

[1]

(c) Add one more point so that the four points make a square. Write down the coordinates of this fourth point and label it D.

.....[2]

SAMPLE

32) In a car park there are 48 cars. $\frac{3}{8}$ of the cars are blue and 25% of the cars are red. How many cars are neither blue nor red?

.....[3]

33) Which of these is the largest number? (You must show your working)

(a) $2 + 0 \times 1 + 9$
(b) $2 \times 0 + 1 + 9$
(c) $2 + 0 \times 1 \times 9$
(d) $2 \times 0 + 1 + 9$
(e) $2 \times 0 \times 1 \times 9$

.....[2]

34) A new mathematical operation has been invented. For any two numbers x■y means 'add 4 to x, then multiply by y', so 8■2 means $8 + 4$, then $\times$ 2, giving 24.

(a) What is 4■5?

.....[1]

(b) What values of a makes a■$6 = 54$?

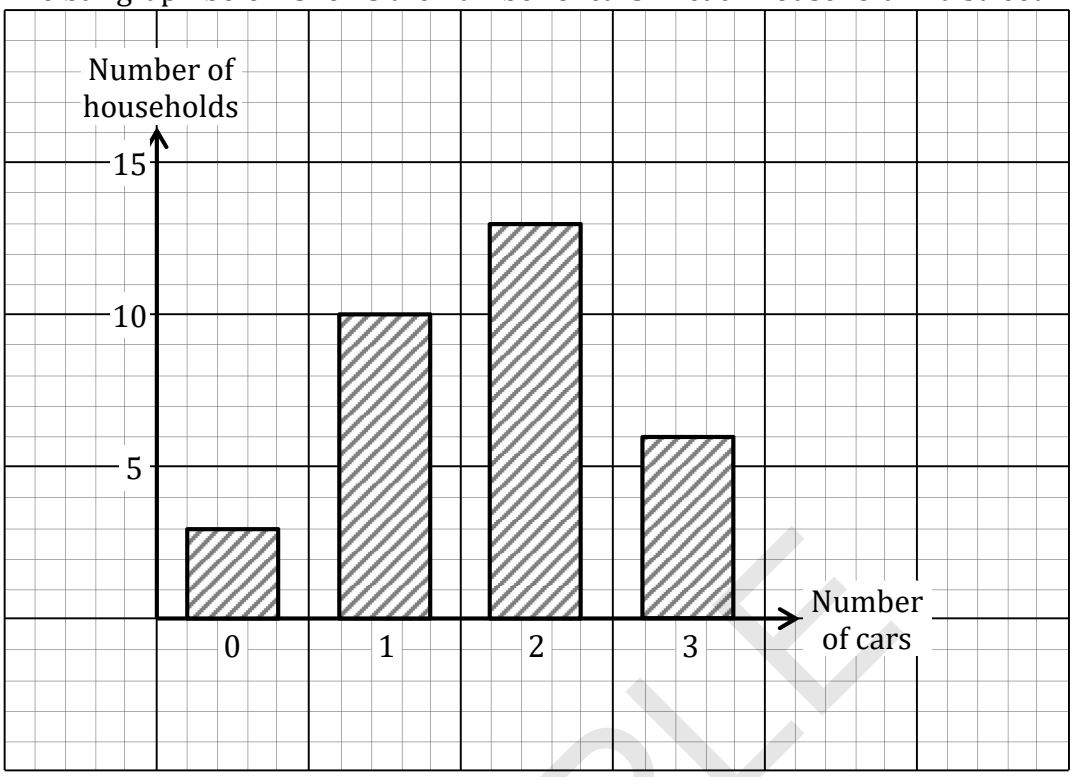
.....[2]

(c) Find b if b■$b = 32$.

.....[2]

SAMPLE

35) The bar graph below shows the number of cars in each household in a street.



(a) How many households have 3 cars?

.....[1]

(b) How many households are there in the street?

.....[2]

(c) How many cars are there in the street?

.....[2]

SAMPLE

36) What is $\frac{1}{4}$ of 20% of $\frac{1}{6}$ of 40% of £1200?

.....[4]

SAMPLE

End of exam, please check your working.