REIGATE GRAMMAR SCHOOL

11+ Entrance Examination January 2017

MATHEMATICS

Time allowed: 45 Minutes

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

Pages	3	4,5	6,7	8,9	10,11	12,13	14
Marks							

1) In a school there are 143 boys, 151 girls, and 43 staff. How many people are there in the school?

...................................[2]

2) Write the number 'fifty four thousand five hundred and twenty three' in figures.

...................................[2]

3) A box of chocolates contains 32 chocolates and a crate contain 18 boxes. How many chocolates are there in one crate?

...................................[2]

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

5.05,   5.5,   5,   5.55,   5.505

....[2]

Largest   Smallest

5) A family with two adults and three children go to the cinema. If an adult ticket costs £3.50 and a child ticket costs £1.70, how much change will they get if they pay with a £20 note?

......................................[2]

6) What is the biggest number that divides into 12, 24, and 42?

......................................[2]

7) A square has a perimeter of 28cm. What is the area of the square?

......................................[2]

8) (a) What is 10% of £450?

......................................[1]

    (b) What is 15% of £450?

......................................[1]

4

9) (a) What is 0.6 written as a fraction in its lowest terms?

………………………………[1]

   (b) What is 0.006 written as a fraction in its lowest terms?

………………………………[1]

   (c) What is 0.606 written as a fraction in its lowest terms?

………………………………[1]

10) How many spots are there on a normal dice?

………………………………[3]

11) (a) Write 35% as a fraction in its lowest terms.

………………………………[1]

   (b) Write $\frac{2}{5}$ as a decimal.

………………………………[1]

12) Martin owed Ellie £7 He paid her back with a £10 note but she did not have any change. How much does Ellie now owe Martin?

………………………………[2]

5

13) The train from Haslemere to London has 8 carriages and each carriage can hold 62 passengers. What is the largest number of passengers that can travel on the train?

.....................................[2]

14) Find:

(a) $\frac{3}{5} \times \frac{1}{4}$

.....................................[2]

(b) $\frac{3}{5} \div \frac{1}{4}$

.....................................[2]

15) Find $5\frac{3}{4} - 1\frac{1}{3}$

.....................................[3]

16) Find $2\frac{5}{6} + 3\frac{2}{3}$

..................................[2]

17) This multiplication has been worked out for you.

$$32 \times 128 = 4096$$

(a) What is $4096 \div 32$?

..................................[1]

(b) What is 16×128?

..................................[1]

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

8,   10,   13,   17,   22, ..., ...

[2]

19) I think of a number, multiply it by 3, then add 2. The result is 38. What was the number I first thought of?

..................................[2]

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

(a) $35 + \text{............} = 61$

[1]

(b) $240 \div \text{............} = 12$

[1]

(c) $(5 + \text{............}) \times 4 = 44$

[1]

(d) $\frac{51 - \text{............}}{5} = 8$

[1]

21) Antony is making some fairy cakes. It takes him 20 minutes to prepare the ingredients, the cakes take 15 minutes to bake and he needs to leave them for 10 minutes to cool down. If he wants to eat them at 6:20pm, what time should he start preparing the ingredients?

......................................[3]

22) Subtract the number of eggs in a dozen from the number of seconds in a half a minute.

......................................[2]

8

23) Barbara the builder needs to build a wall 15 bricks wide and 8 bricks high.

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

...................................[2]

(b) She can lay 3 bricks every 2 minutes. How long will it take her to build the wall?

...................................[2]

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

1,   3,   9,   27, ... , ...

[2]

25) The diagram shows an equilateral triangle.

(a) Find the value of x.

13cm $3x + 1$

$2y - 5$
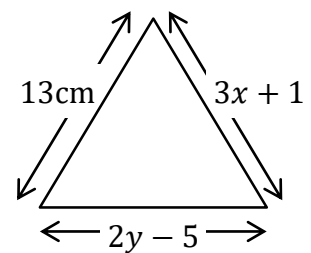
...................................[2]

(b) Find the value of y.

...................................[2]

26) Some children count the colours of 80 cars in a car park.

They then draw a pie chart to show their results.

The pie chart is shown on the right.
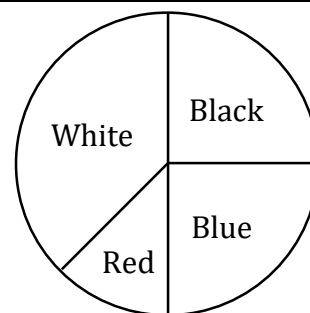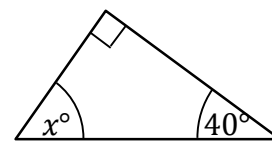

(a) How many blue cars are there?

...................................[1]

(b) How many cars are there which are NOT red?

...................................[2]

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

...................................[3]

28) Anne and Gail are doing a 12km sponsored walk.

(a) Anne can walk at 4km per hour. How long will she take to finish the walk?

...................................[1]

(b) Gail can walk at 3km per hour. How far will she still have left to walk when Anne finishes?

...................................[2]

10

29) I have a painting in a frame. The frame is 50cm wide and 40cm high. There is a border 10cm wide around the painting. Find the width and height of the painting.
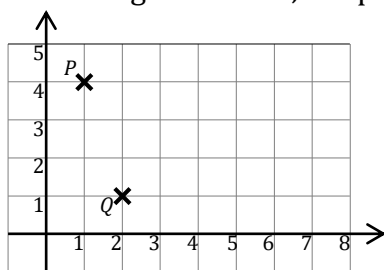
Frame
40cm
Painting
10
10
50cm
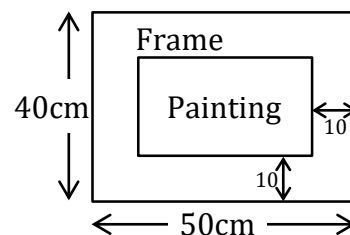
Width= ……………………………………   Height= ………………………………[3]

30) Clare and James divide some sweets between them. There are 35 sweets, and Clare takes 7 more than James. How many does James take?

………………………………[3]

31) In the diagram below, the point P has coordinates (1,4).

(a) Write down the coordinates of point Q.

………………………………[1]

(b) The point R has coordinates (5,2). Mark R 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 S.
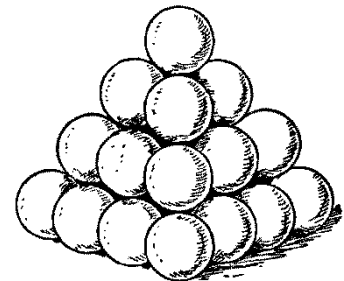
………………………………[2]

11

32) In an orchestra there are 36 children. If $\frac{1}{3}$ play the recorder and 25% play the triangle, how many children play something else?

...................................[4]

33) The picture on the right shows a triangular stack of cannonballs. How many cannonballs are there in the stack?

...................................[3]

34) A new mathematical operation has been invented. For any two numbers $x \star y$ means 'add 2 to x, then multiply by y', so $4 \star 2$ means $4 + 2$, then $\times 3$, giving 18.
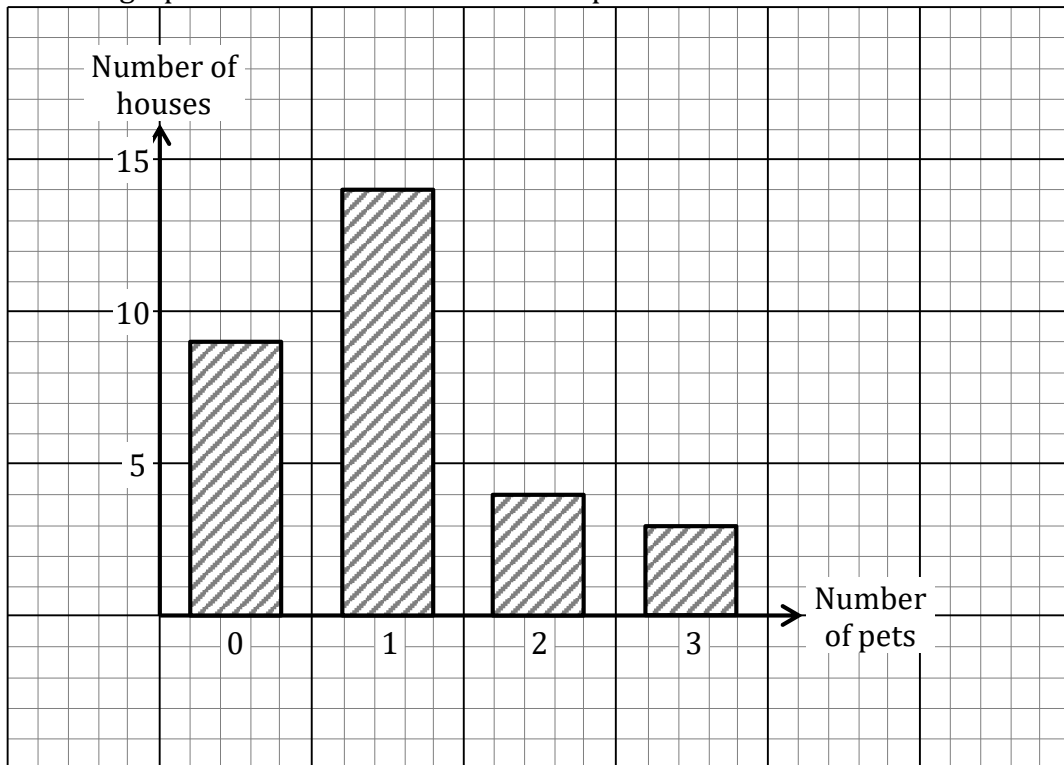
(a) What is $6 \star 3$?

...................................[1]

(b) What values of a makes $a \star 5 = 25$?

...................................[2]

(c) Find b if $b \star b = 24$.

...................................[2]

12

35) The bar graph below shows the number of pets sets in each house in a street.

(a) How many houses have 1 pet?

...................................[1]

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

...................................[2]

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

...................................[2]

36) $11 \times 11 = 121$. Calculate 111×111. Using your answers try to predict what 1111×1111 would be.

....[2]

End of exam, please check your working.