REIGATE GRAMMAR SCHOOL

Entrance Examination
MATHEMATICS

January 2018

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

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

1) In a school there are 465 boys, 531 girls, and 89 staff. How many people are there in the school?

.....[2]

---

2) Write the number 'thirty six thousand and forty three' in figures.

.....[1]

---

3) A train carriage has 62 seats, if the train has 12 carriages what is the largest number of passengers it can seat?

.....[2]

---

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

3.33, 3.03, 3.3, 3, 3.303

…… .....[2]

Largest Smallest

SAMPLE

5) A family with two adults and four children go to the circus. If an adult ticket costs £11.50 and a child ticket costs £3.70, how much change will they get if they pay with two £20 notes?

.....[2]

6) What is the biggest number that divides into 14, 35, and 42?

.....[2]

7) A square has area 49cm^2. What is the perimeter of the square?

.....[2]

8) (a) What is 10% of £950?

.....[1]

(b) What is 11% of £950?

.....[2]

SAMPLE

9) (a) What is 0.8 written as a fraction in its lowest terms?

.....[1]

(b) What is 0.08 written as a fraction in its lowest terms?

.....[1]

(c) What is 0.88 written as a fraction in its lowest terms?

.....[1]

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

.....[2]

11) (a) Write 62% as a fraction in its lowest terms.

.....[1]

(b) Write $\frac{1}{8}$ as a decimal.

.....[1]

12) Julie owed Tasweer £12.70. She paid her back with a £20 note but she did not have any change. How much does Tasweer now owe Julie?

.....[2]

SAMPLE

13) The bus from Redhill to London can hold 58 passengers. If the bus travels to London 18 times a day, what is the maximum number of passengers that can get to London?

.....[2]

14) Calculate:

(a) $\frac{3}{8} \times \frac{1}{4}$

.....[2]

(b) $\frac{3}{8} \div \frac{1}{4}$

.....[2]

15) Calculate $5\frac{3}{8} - 2\frac{1}{4}$

.....[3]

SAMPLE

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

.....[2]

17) This multiplication has been worked out for you.

$$41 \times 131 = 5371$$

(a) What is $5371 \div 131$?

.....[1]

(b) What is 4.1×13.1

.....[1]

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

14, 10, 6, 2, ….. , ….

[2]

19) I think of a number, divide it by 3, then add 7. The result is 18. What was the number I first thought of?

.....[2]

SAMPLE

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

(a) $35 + \ldots\ldots\ldots = 78$

[1]

(b) $156 \div \ldots\ldots\ldots = 12$

[1]

(c) $(7 - \ldots\ldots\ldots) \times 13 = 78$

[1]

(d) $\frac{79-}{6} = 12$

[1]

21) Antony is making some cupcakes. It takes him 20 minutes to prepare the ingredients, the cakes take 22 minutes to bake and he needs to leave them for 10 minutes to cool down. If he wants to eat them at 4:10pm, what time should he start preparing the ingredients?

.....[3]

22) Subtract the number of hours in a day from the number of seconds in a minute.

.....[2]

SAMPLE

23) Linda the builder needs to build a wall 23 bricks wide and 12 bricks high.

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

.....[2]

(b) She can lay 6 bricks every 4 minutes. How long will it take her to build the wall?

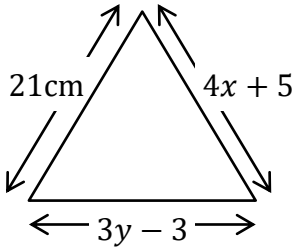
.....[2]

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

1, 4, 9, 16, ..., ...

[2]

25) The diagram shows an equilateral triangle.



(a) Find the value of x.

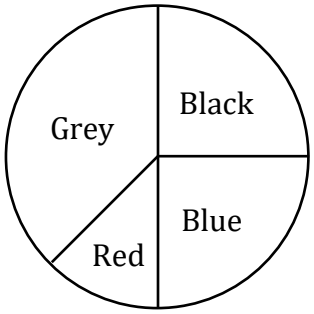
.....[2]

(b) Find the value of y.

.....[2]

SAMPLE

26) Some children count the colours of 120 cars in a car park.
They then draw a pie chart to show their results.
The pie chart is shown on the right.



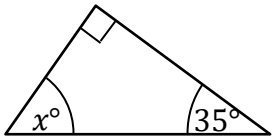
(a) How many black cars are there?

.....[1]

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

.....[2]

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



.....[3]

28) Josh and Gary are doing a 36km sponsored walk.

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

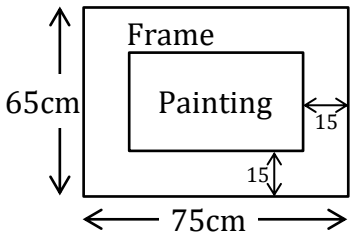
.....[1]

(b) Gary can walk at 5km per hour. How far will he still have left to walk when Josh finishes?

.....[2]

SAMPLE

29) I have a painting in a frame. The frame is 75cm wide and 65cm high. There is a border 15cm wide around the painting. Find the width and height of the painting.



Width= ..... Height= .....[3]

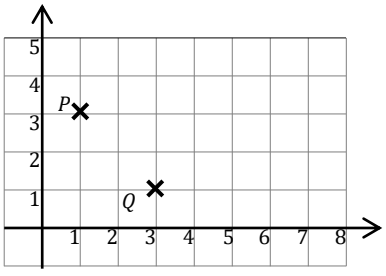
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30) Martin and Dai divide some sweets between them. There are 65 sweets, and Martin takes 7 more than Dai. How many does Martin take?

.....[3]

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31) In the diagram below, the point P has coordinates (1,3).



(a) Write down the coordinates of point Q.

.....[1]

(b) The point R has coordinates (5,3). 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]

SAMPLE

32) In an orchestra there are 60 children. If $\frac{1}{5}$ play the recorder and 40% play the triangle, how many children play something else?

.....[4]

33) Which of these is the largest number?

- $2+0+1+8$
- $2\times0+1+8$
- $2+0\times1+8$
- $2+0+1\times8$
- $2\times0\times1\times8$

.....[2]

34) A new mathematical operation has been invented. For any two numbers $x \star y$ means 'subtract 3 from x, then multiply by y', so $8 \star 2$ means $8 - 3$, then $\times 2$, giving 10.

(a) What is $7 \star 5$?

.....[1]

(b) What values of a makes $a \star 7 = 42$?

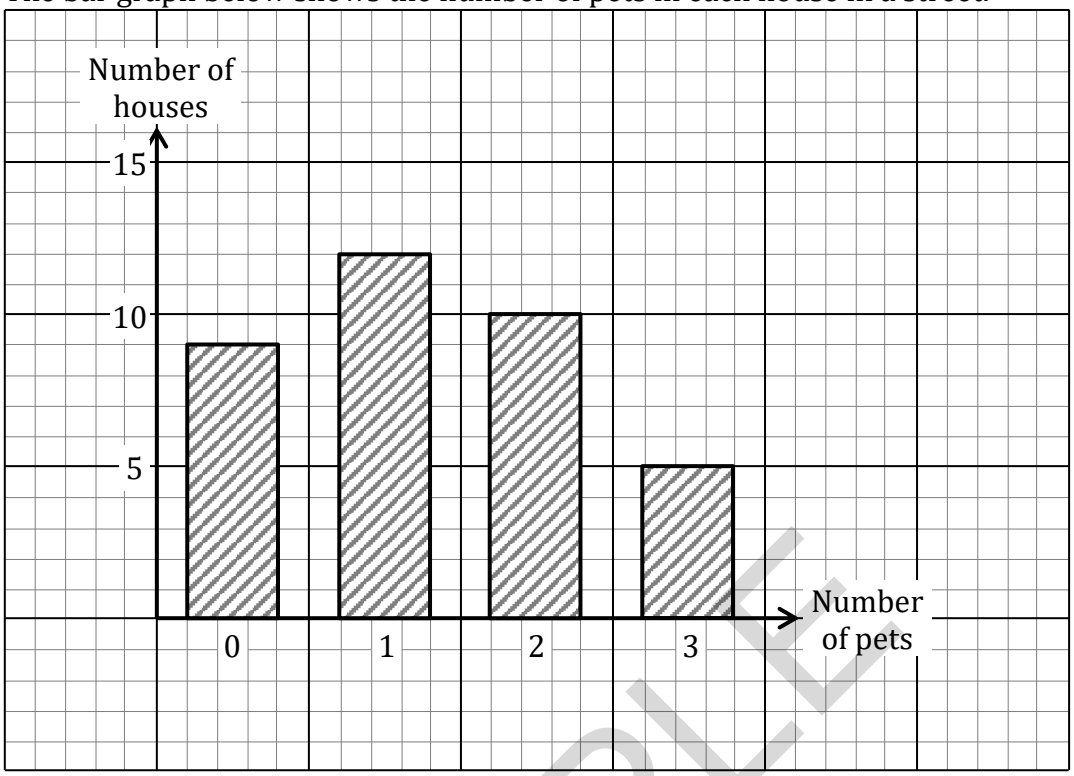
.....[2]

(c) Find b if $b \star b = 28$.

.....[2]

SAMPLE

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



(a) How many houses have 2 pets?

.....[1]

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

.....[2]

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

.....[2]

SAMPLE

36) What is 20% of 30% of 40% of £50?

.....[4]

SAMPLE

End of exam, please check your working.