REIGATE GRAMMAR SCHOOL

11+/13+ PT Entrance Examination Exemplar

MATHEMATICS

Time allowed: 30 minutes

Name:

- 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

For examiner use

Page	3	4	5	6	7	8	9	10	11	Total
Score										
Marks	8	8	7	10	9	10	7	5	2	66

1) If an adult ticket on the bus costs £1.50 and a child ticket costs 90p, how much change will a family of 2 adults and their 3 children get if they pay with a £10 note?

.....[2]

2) If a square has an area of 36cm^2, what is its perimeter?

.....[2]

3) What is 0.007 written as a fraction?

.....[1]

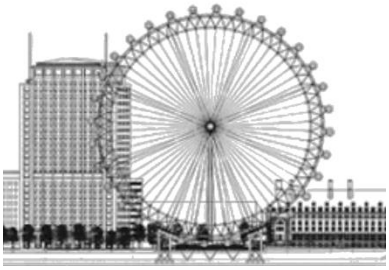
4) How many minutes are there in one day?

.....[3]

5) On January 1st, the temperature in Moscow was $-6°C$ and the temperature in Rome was 13°C. How many degrees warmer was it in Rome than in Moscow?

.....[2]

6) The London Eye has 32 passenger capsules, each of which can take up to 18 people. What is the maximum number of passengers that can travel at any one time?



.....[2]

7) Find:

(a) $\frac{3}{7} \times \frac{1}{2}$

.....[2]

(b) $\frac{3}{7} \div \frac{1}{2}$

.....[2]

8) What is $4\frac{1}{4} - 2\frac{1}{2}$.

.....[2]

9) Calculate the following:

$$5 - (2 - 5)^2$$

..... [2]

10) Josh has to be at work at 8:15am. It takes him 15 minutes to get dressed, 20 minutes to eat breakfast and 12 minutes to drive to work. What is the latest time Josh could get up to get to work on time?

.....[3]

11) Edward drives to his aunt's house at an average speed of 50 km/h, and it takes him 2 hours to get there.

(a) How far away does Edward's aunt live?

.....[2]

(b) What was his average speed home again if it takes him $2\frac{1}{2}$ hours to get back?

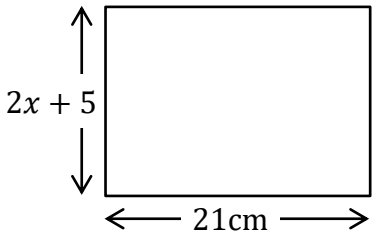
.....[2]

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

$1, \quad -2, \quad 4, \quad -8, \quad$ ..... ,.....

[2]

13) (a) If the shape to the right is a square, work out the value of x.

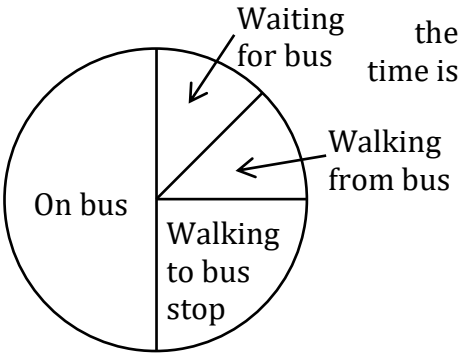


.....[2]

(b) A regular pentagon has the same side length as the square. What is its perimeter?

.....[2]

14) It takes Karen 40 minutes to get to school in morning. The pie chart shows how the time is divided.



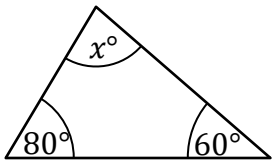
(a) How long does Karen spend on the bus?

.....[1]

(b) How long does Karen spend walking?

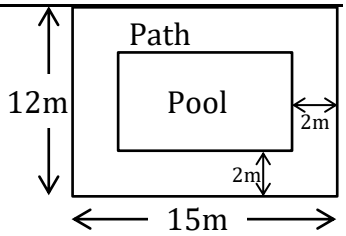
.....[2]

15) Calculate the value of x in the triangle shown.



.....[3]

16) 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.

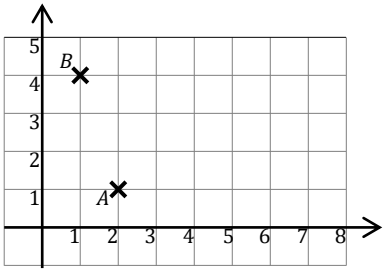


.....[3]

17) Gary and Martin have some money. Martin has £13 more than Gary, together they have £51. How much money does Martin have?

.....[3]

18) In the diagram below, the point B has coordinates (1,4).



(a) Write down the coordinates of point A.

.....[1]

(b) The point C has coordinates (7,1). Mark C on the diagram and then draw a line from B to C.

[1]

(c) The point D is on the line you have drawn, and it is twice as far from B as from C. Mark D on the diagram and write down its coordinates.

.....[2]

19) In a car park there are 60 cars. $\frac{5}{12}$ of the cars are red and 20% of the cars are blue. How many cares are there that are neither red nor blue?

.....[3]

20) There are 5 competitors in a tennis competition. If each player plays every other player once only, how many matches will there be?

.....[2]

21) A new mathematical operation has been invented. For any two numbers $x \boxdot y$ means 'multiply x by three, then add y', so $4 \boxdot 2$ means $4 \times 3 + 2 = 12 + 2 = 14$.

(a) What is $6 \boxdot 4$?

.....[1]

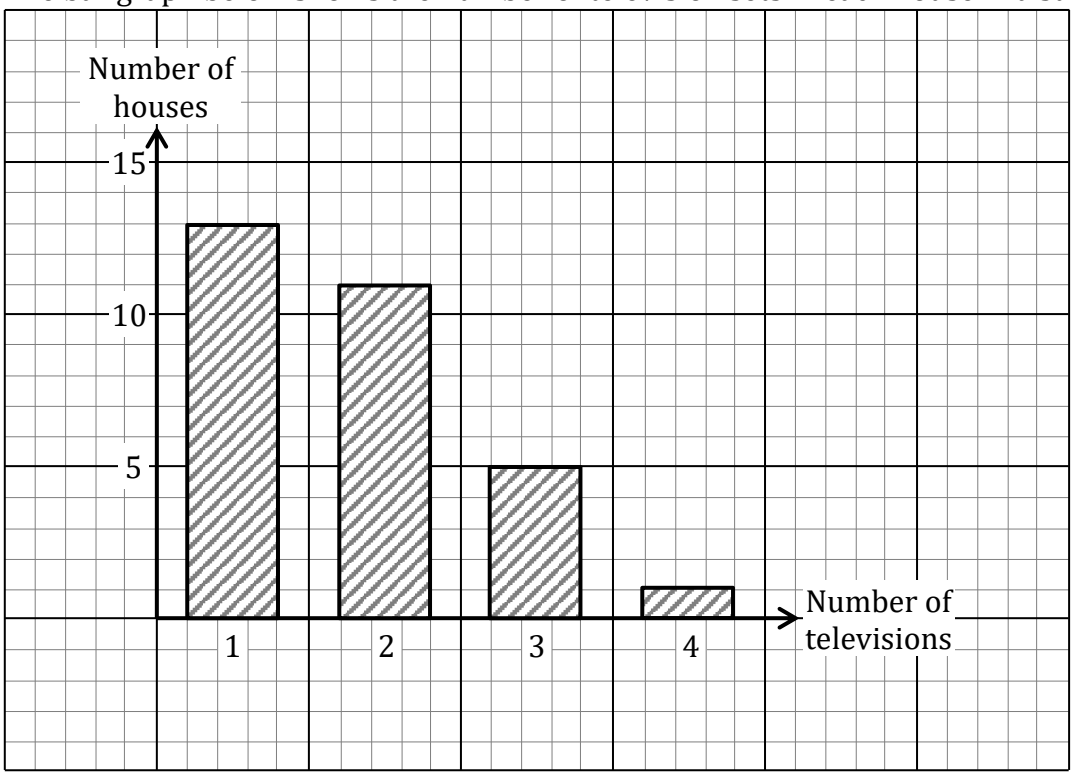
(b) What values of a makes $a \boxdot 5 = 29$?

.....[2]

(c) Find b if $b \boxdot b = 52$.

.....[2]

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



(a) How many houses have 2 televisions?

.....[1]

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

.....[2]

(c) How many television sets are there in the street?

.....[2]

23) At a birthday party, one half drank only lemonade, one third drank only cola, 15 people drank neither, and nobody drank both. How many people were at the party?

.....[2]