DULWICH COLLEGE
FOUNDED 1619

YEAR 7 ENTRANCE AND SCHOLARSHIP EXAMINATION

Mathematics Specimen Paper

Your Last Name	
Your First Name	
Your Current School	
Candidate Number	

Time allowed for this paper: 1 hour

Instructions
- Attempt all the questions.
- Calculators must not be used.
- This test is designed to be challenging, so you may not find all the questions straightforward and you may not finish the whole paper. Do not spent too much time on any one question.
- All workings and calculations should be written in the spaces provided. Marks are awarded for correct workings, even if you don't get as far as an answer.
- Keep working steadily and carefully. Then if you have time at the end, go back and try to tackle any questions you did not find so easy when you first saw them.
- There are 100 marks available in total for this test.
- You must not write in the squares on the bottom right of each page.
- The marks available for each part of a question are given in square brackets.

(-1) 911 + 91 + 9

(-2) 53.4 - 2.5

(-3) 25 x 71

Answer: _____ **(3)**

(-4) 86.1 + 7

Answer: _____ **(3)**

(-5) 0.04 x 1000

Answer: _____ **(2)**

(-6) $\dfrac{2}{3} + \dfrac{3}{5}$

Answer: _____ **(3)**

(-7) Fill in the missing number.

$$\frac{15}{} = \frac{1}{3} = \frac{}{12}$$

Answer: _____ **(2)**

(-8) Write the following amounts in size order , starting with the smallest.

0.55   58% $\frac{13}{25}$

Answer: _____ **(3)**

(-9) A drink and a box of a popcorn together cost 90p. Two drinks and a box of a popcorn together cost £1.45. What does a box of popcorn cost ?

Answer: _____ **(3)**

(-10) On a bus , the ratio of men to women is 4: 5 . If there are 12 women on the bus, how many men are on the bus?
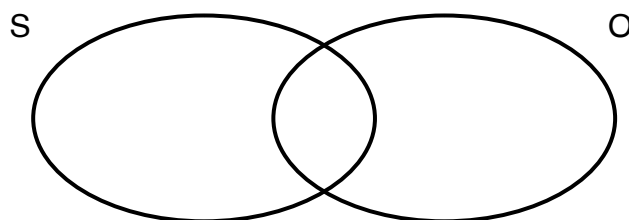
Answer: _____ **(3)**

(-11) Fill in the missing digit so that there is no remainder when the following number is divided by 6:

281 ___

Answer: _____ **(2)**

(-12) If S = (square numbers) and O = (odd numbers) put each of the numbers , 1, 2, 3, 4, 5 and 6 into the correct space on the Venn diagram:

S ⬭⬭ O

(-13) My age is a multiple of 7. Next year it will be a multiple of 5. I am more than 20 years old , but less than 80 . How old am I ?

Answer: _____ **(2)**

(-14) A girl is 5 years older than her brother. If the sum of their ages is 17, how old are they ?

Answer: _____ **(3)**

(-15) The 15.17 train from liverpool arrives at London (Euston) at 18.02.
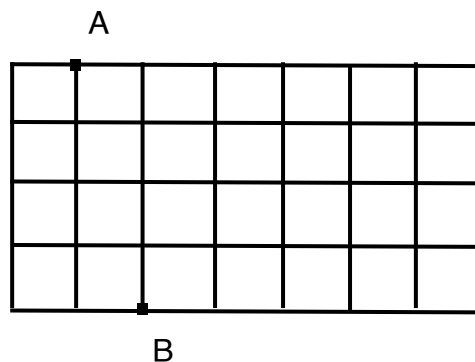
    (-a) How long does the journey take ?

                                  Answer: _____ **(3)**

    (-b) if the average speed of the train is 80 miles per hour, find the distance between London and Liverpool ?
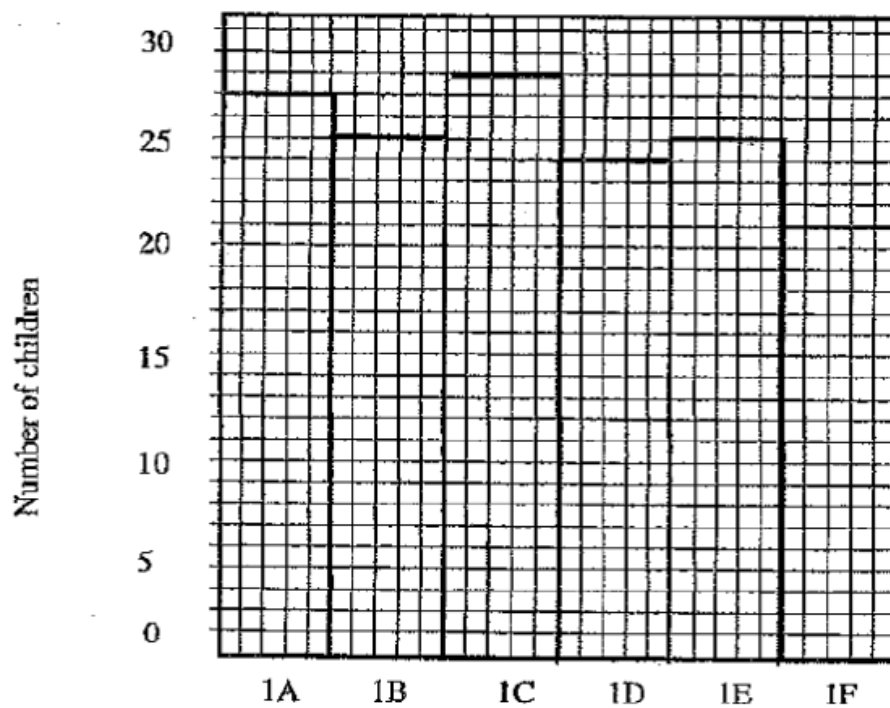
                                  Answer: _____ **(3)**

(-16) By following the dotted lines , find a path joining A and B which divides the rectangle into 2 pieces of equal area.

A

B

(-17) Using each of the digits 2, 4 and 9, find two three-digit numbers which have both 2 and 7 as factors.

Answer: _____ **(4)**

(-18) This graph shows the numbers of children in each of the first forms of a school.

(-a) Which two forms have the same size?

Answer: _____ **(2)**

(-b) Which form is largest?

Answer: _____ **(1)**

(-c) How many more children are there in the largest form than in the smallest?
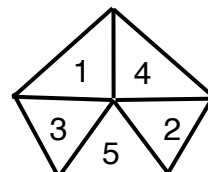
Answer: _____ **(2)**
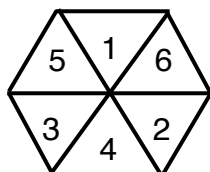
(-d) How many first-formers are there in total ?

Answer: _____ **(2)**

(-e) What is the average form size ?

Answer: _____ **(3)**

(-19) Here are two spinners:

(-a) Find the probability (chance) of Peter spinning a three.

Answer: _____ **(2)**

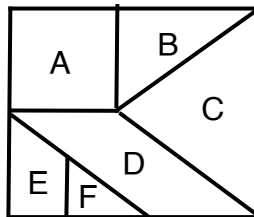**(-b)** Who is more likely to spin an even number ?

Answer: _____ **(2)**

(-20) Last week , at a seaside resort , there was an average of 3 hours of sunshine per day for the six days Monday to Saturday. On the Sunday , there were 12 hours of sunshine. What was the average amount of sunshine per day for the whole week?

Answer: _____ **(4)**

(-21) A piece of wire 30cm long is bent into the shape of a rectangle. If the rectangle is twice as long as it is wide , what is its area ?

Answer: _____ **(4)**

(-22) This 4 cm square has been cut into 6 pieces: A, B, C, D, E and F. A is a square of side 2 cm. D is a parallelogram.

(-a) Calculate the perimeter of piece A.

Answer: _____ **(1)**

(-b) What sort of triangle is piece B ?

Answer: _____ **(2)**

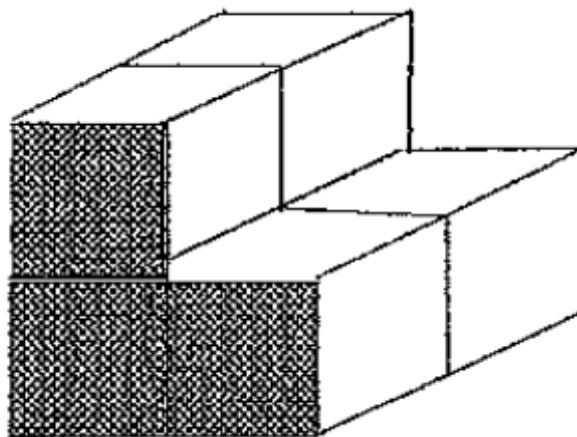**(-c)** Which two pieces fit together to make a Trapezium ?

Answer: _____ **(1)**

(-d) What is the area of piece C ?

Answer: _____ **(2)**

(-e) What fraction of the total area is the area of piece D ?

Answer: _____ **(3)**

(-23) The diagram below shows some steps made out of equal cubes. The shaded area of the L- shaped end of the figure is 108 square inches.

(-a) What is the length of a side of one of the cubes ?

Answer: _____ **(2)**

(-b) What is the volume of the figure ?
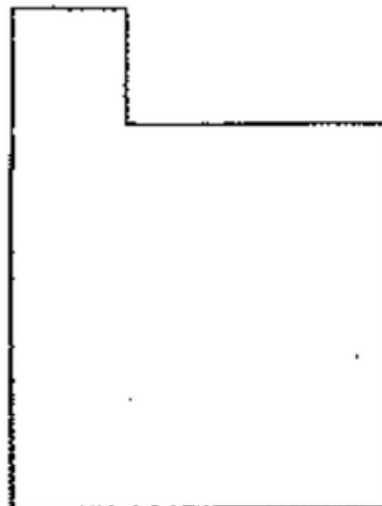
Answer: _____ **(3)**

(-24) Mary's telephone number is made up of 6 digits. The first digit is 1 and the last is 8. It is also known that the sum of any three consecutive digits in it is 12. What is the Mary's telephone number ?

Answer: _____ **(3)**

(-25) Two farmers were taking cows to a market. One said to other, If you give me one of your cows we shall have the same number. The other farmer replied, If you give me one of yours, I shall have twice as many as you. How many cows did each have ?

Answer: _____ **(4)**

(-26) Fit these two pieces together to make all the possible shapes that have one line of symmetry.

Draw your answer in the space below.