SEVENOAKS SCHOOL

YEAR 7 (11+) ENTRANCE EXAMINATION
January 2015
for entry in September 2015

MATHEMATICS

Name: ……

School: ……. .

Time allowed: 1 hour

Equipment needed: Pen, pencil, eraser, ruler.

Information for candidates:

1. Calculators are NOT allowed.
2. Write your name and school on this sheet.
3. Write your answers on the question paper in the space provided.
4. There are 18 questions in this paper, try to answer all of them, but don't worry if you don't complete the paper. If you get stuck, just go on to the next question and if you have time at the end come back to the one(s) you left.
5. There are 60 marks in total available for this paper. Marks for each question are shown in square brackets [ ] after the question.
6. Show all your working. You may be awarded marks for correct working even if your final answer is incorrect, and a correct answer unsupported by correct working may not receive full marks.

1. Danielle went to the store to buy stationery for school. She bought four rulers, five pens and three pencils. The rulers cost 46p each, the pens cost 37p each and the pencils cost 13p each.

   a) How much did she pay in total for her stationery?

   _____[3]

   b) If she paid with a £10 note, how much change did she get?

   _____ [1]

2. Ben's Dad was making a fence for their garden. He needed to buy a piece of wood that he could cut into 14 equal parts. If each part had to be 114cm long, what length would the piece of wood need to be?

   _____ [3]

3. Gavin spends £4.90 on two items in a shop. One item cost 40p more than the other. How much did each item cost?

   _____ [3]

4. The sum of the all the whole numbers from 1 to 50 inclusive is 1275. Work out the sum of the whole numbers from 2 and 51 inclusive.

_____ [3]

5. Find the missing numbers in the sequences below:

a) ……. 6 12 24 ……. [2]

b) 4 …… 10 13 ……. [2]

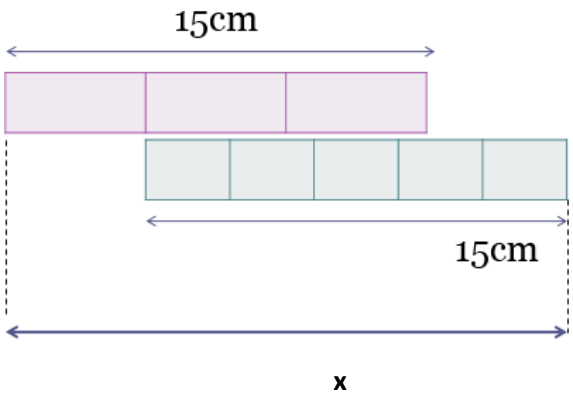
c) …… 16 8 4 ……. [2]

d) …… 6 3 0 -3 [1]

6. Seesaws cost £200 each in January 2010. In January 2011 they had gone up by 45%. Calculate how much a seesaw cost in January 2011.

_____ [3]

7. Calculate the total length marked with x.



_____ [3]

8. 'Purple Fire' paint is made by mixing red and blue paint in the ratio 3:1. If I want to make 1 litre of 'Purple Fire' paint, how much red paint do I need?

_____ [3]

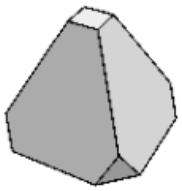
9. How many letters of the word MATHEMATICS do not have any lines of symmetry?

_____ [2]

10. What is the remainder when 354972 is divided by 7?

_____ [3]

11. A solid square based pyramid has all of its corners cut off, as shown. How many edges does the resulting shape have?



_____ [3]

12. The diagram shows a rod with five equally space points A, B, C, D and E marked on it.

The rod is rotated three times through 180°, first about the point A, then about the point B and finally about the point E. Which point finishes in the same position as it was at the start?

_____ [4]

13. My train was scheduled to leave at 17:40 and to arrive at 18:20. However it started 5 minutes late and the journey then took 42 minutes. At what time did I arrive?

_____ [3]

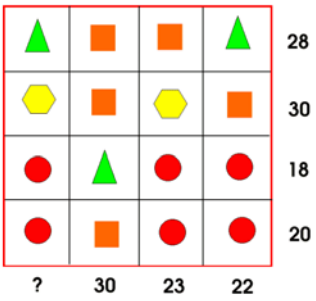
14. In the diagram the small squares are all the same size. What fraction of the large square is shaded?

_____ [3]

15. A floor measures 5m by 4m. It is to be covered by rectangular tiles measuring 80cm by 50cm. How many tiles are needed?

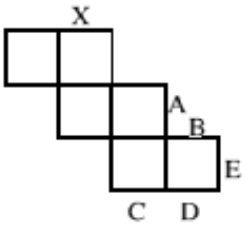
_____ [3]

16. Each symbol has a numerical value. The total for the symbols is written at the end of each row and column. Can you find the missing total that should go where the question mark has been put?



_____ [4]

17. The diagram shows the net of a cube. Which edge meets the edge X when the net is folded to form the cube?



_____ [2]

18. In the sum below the letters J, M and C represent three different non-zero digits. What is the value of J + M + C?

$$\begin{array}{r} J\ \ J \\ M\ \ M \\ C\ \ C \\ \hline J\ M\ C \\ \hline \end{array}$$

_____ [4]