SEVENOAKS SCHOOL

YEAR 7 (11+) ENTRANCE EXAMINATION
January 2012
for entry in September 2012

MATHEMATICS

Name: ……

School: ……

Time allowed: 1 hour

Equipment needed: Pen, pencil, eraser and ruler.
Calculators are **not** permitted.

Information for candidates:

1. Write your name and school on this sheet.
2. Write your answers on the question paper in the space provided.
3. There are 12 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.
4. There are 60 marks in total available for this paper. Marks for each question are shown in square brackets [ ] after the question.
5. 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. Work out, making sure to show your working:

   a) $25 - 86 + 112$

   Answer: …… [1]

   b) 125×160

   Answer: …… [2]

   c) $20\%\ of\ £640$

   Answer: …… [1]

   d) $1300 \div 26$

   Answer: …… [2]

   e) $\frac{3}{4} \times \frac{12}{9}$

   Answer: …… [2]

   f) Subtract two thousand seven hundred and eighteen from three thousand one hundred and forty-three.

   Answer: …… [1]

2. Eliot made three purchases for £3.12, £10.25 and £4.80.
   What did he spend in total, to the nearest pound?

   Answer: …… [2]

3. Consecutive numbers are one apart; for example 7, 8, and 9 are three consecutive numbers.

   a) Find three consecutive numbers with a sum of 36.

   Answer: …… [2]

   b) Find three consecutive numbers which give 336 when multiplied together.

   Answer: …… [2]

4. Find x:

   a) $(x \times 18) \div 9 = 16$

   Answer: …… [2]

   b) $(x + 12) \times 4 + 2 = 62$

   Answer: …… [3]

   c) $(5x - 3) - (4x - 5) = 12$

   Answer: …… [3]

   d) $5(x - 3) + 4(x - 2) = 13$

   Answer: …… [3]

5. Write down the next two terms of these sequences:

   a) 5, 8, 11, …, …

   Answer: …… [2]

   b) 4, 8, 16, …, …

   Answer: …… [2]

   c) 100, 90, 80, …, …

   Answer: …… [2]

6. Maya draws a plan of her school using a scale of 1 cm to 12 m.

   a) On the plan, the garden is 2 cm wide.
   What is the real width of the garden?

   Answer: …… [2]

   b) Her Maths classroom is 4 m by 3 m.
   What are its dimensions on the plan?

   Answer: …… [2]

7. Toby is going to have a party and fills his cool box with blocks of ice cream.
   The cool box is rectangular with dimensions 30 cm x 30 cm x 62 cm.
   The ice cream blocks are each rectangular with dimensions 10 cm x 5 cm x 15 cm.

   How many blocks of ice-cream can he put into the cool box?

   Answer: …… [2]

8. In a sale, normal prices were reduced by 35%

a) The normal price of a TV was £600
Work out the sale price of the TV.

Answer: ..... [2]

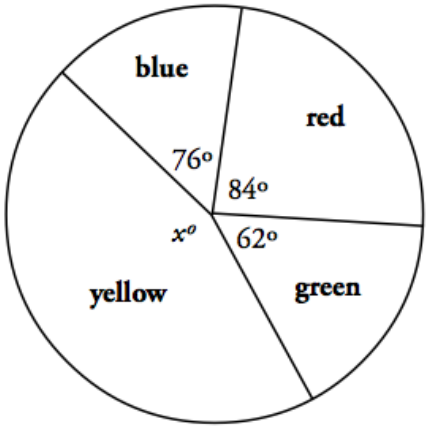
b) The normal price of a clock was reduced by £140
Work out the normal price of the clock.

Answer: ..... [2]

c) The sale price of a computer was £884
Work out the normal price of the computer.

Answer: ..... [2]

9. Class Five conduct a traffic survey of the colours of 180 cars.
They put their results into a Venn diagram.



a) Find the value of x°.

Answer: ..... [2]

b) How many red cars were seen?

Answer: ..... [2]

10. I got 30% on a 10-problem test, 70% on a 20-problem test and 80% on a 30-problem test.
If the three tests are combined into one 60 – problem test, what percentage is my overall score?

Answer: …… [4]

11. Boxes are formed from sticks as below.

How many sticks are needed to make the pattern with eight boxes?

Answer: …… [2]

How many sticks are needed to make the pattern with eighty-eight boxes?

Answer: …… [2]

12. Take a 2 digit number, then reverse it. Take the smaller number away from the larger.
[For example, starting with 83, you would form 83 – 38 = 45.
Starting with 91, you would form 91 – 19 = 72]
Do this several times. What do you notice about your answers?

Answer: ……..…… [2]

What happens if you repeat this process? Why?

Answer: ……..…… [2]

END OF PAPER