# SEVENOAKS SCHOOL

## YEAR 7 (11+) ENTRANCE EXAMINATION

## January 2011

## for entry in September 2011

# 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 all of your answers on the question paper in the space provided.
3. Try to answer all questions, but don't worry if you cannot complete all of them. If you are stuck, just go on to the next question and if you have time come back to the one 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.

1 a) Work out $36-89+126$

b) Work out $253\times180$

c) Work out $20514\div26$

d) Subtract six hundred and nine from one thousand and eleven.

[8 marks]

2. Maya made three purchases for £1.08, £5.04 and £9.89. What did she spend in total, to the nearest pound?

[2 marks]

3. a) $(a\times9)\div6=6$ Find $a$ [2 marks]

b) $(b+6)\times8=64$ Find $b$ [2 marks]

c) $(19\times c)+25=101$ Find $c$ [2 marks]

4. James draws a plan of his school using a scale of 1cm to 6m. On the plan the playground is 5cm long. What is the real length of the playground?

[2 marks]

5. One display cabinet holds 38 DVDs. How many cabinets will be needed to hold 646 DVDs?

[2 marks]

6. What fraction of 2.4 litres is 400ml? [2 marks]

7. Eliot is now twice his cousin's age. In 4 years' time Eliot will be 16. How old will his cousin be then?

[2 marks]

8. Seeta and Ben eat Weetabix breakfast cereal every day. They each eat more than one biscuit a day. Each Weetabix box contains 24 biscuits. Ben eats $x$ biscuits each morning. Seeta is less hungry and only has $y$ biscuits.

4 days after buying a new box, there are only 4 biscuits left in the Weetabix box.

Find $x$ and $y$ [2 marks]

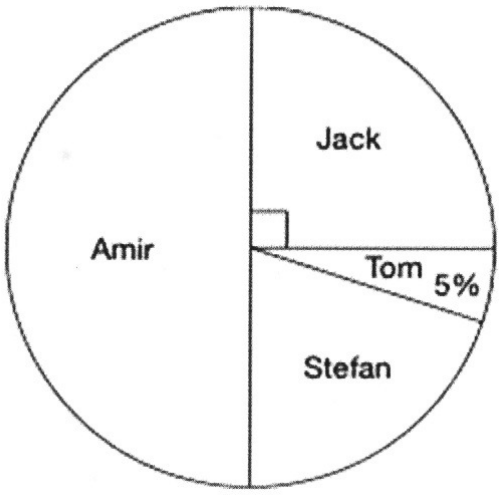
9. Six people pay £5.50 each for a meal in a restaurant. They leave a 10% tip for the waiter. How much change do they receive from a £50 note?

[2 marks]

10. Calculate a) $\frac{2}{5}$ of £2.50 b) $\frac{3}{7}$ of 35 [2,2 marks]

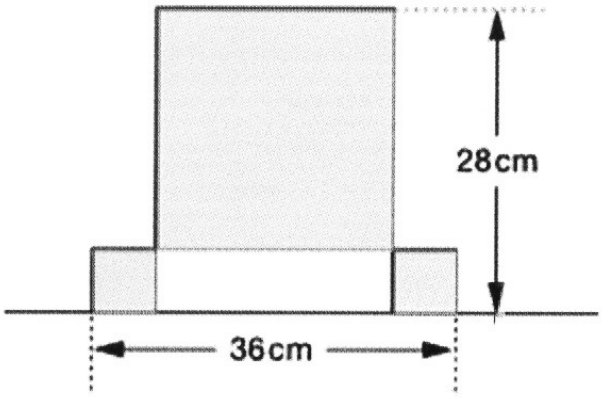
11. 40 children predicted who would win the boys' *Call of Duty* competition.

The pie chart below shows their predictions.




How many children predicted that Stefan would win? [2 marks]

12. This design has one large square and two identical small squares.




Calculate the length of a side of the large square. [2 marks]

13. Maya wants to make some purple paint. She knows that she can make purple by mixing red and blue paint in the ratio 4:5.

a) She has 12 litres of red paint. How much blue paint will she need?
b) How much purple paint will that make?
c) Eliot needs 36 litres of purple paint. How much red paint will he need?

[2,2,2 marks]

14. Lizzie gets 20% on a 10-problem test, 80% on a 20-problem test and 90% on a 30-problem test. If the three tests are combined into one 60-problem test, what percentage is her overall score?

[2 marks]

15. A number is called a palindrome if it reads the same backwards as forwards. For example, 13931 is a palindrome. What is the difference between the least 5-digit palindrome number and the greatest 6-digit palindrome number?

[4 marks]

16. In a children's game you call out all the numbers from 1 to 100. You clap every time you say either a multiple of 3 or a number ending in 3. How many times would you clap?

[4 marks]

17. Four children bought a birthday present for their father. One of the children hid the present. Their mother asked them who had hidden the present. The four boys involved made the following statements about the offender:

Alfred: "It was not me!" Benjamin: "It was not me!"

Christian: "It was Daniel!" Daniel: "It was Benjamin!"

It turned out that exactly one of them did not tell the truth. Who?

[4 marks]

18. When freezing, water increases its volume by 1/11. By what part of its volume will ice decrease when it melts and turns back into water?

[4 marks]

Total [60 marks]

END OF PAPER