HAMPTON COURT HOUSE

FORTITER IN RE SUAVITER IN MODO

Surname: ....   First name: ....

Entrance Examination
Year 7
(to be taken in Y6)

MATHEMATICS

Please read this information before the examination starts.

- This examination is 45 minutes long.

- There are 68 marks in this test.

- Calculators are not allowed.

- Show all your workings clearly. Credit may be awarded for a logical method even if the final answer is incorrect.

- Answer as many questions as you can in the time available. Do not worry if you cannot complete all the questions, as curricula vary from school to school.

1. Write down the answers to these questions.
   You may show your working or work them out in your head.
   a. 12×8

   Answer: _____ [1]

   b. 1.567×10

   Answer: _____ [1]

   c. $23405 \div 1000$

   Answer: _____ [1]

   d. 0.87×100

   Answer: _____ [1]

2. Calculate
   a. $356 + 63$

   Answer: _____ [1]

   b. $867 - 251$

   Answer: _____ [1]

   c. $875.25 + 2.6$

   Answer: _____ [1]

   d. $691.6 - 84.3$

   Answer: _____ [1]

3. Work out
   a. 256×3

   Answer: _____ [1]

   b. 312×12

   Answer: _____ [1]

4. Work out
   a. $240 \div 4$

   Answer: _____ [1]

   b. $561351 \div 3$

   Answer: _____ [2]

5. Calculate
   a. $2 \times 3 - 4$

   Answer: _____ [2]

   b. $12 + 8 \div 4$

   Answer: _____ [2]

   c. $2^2 \times 3 - 4$

   Answer: _____ [2]

   d. $14 - 6 \times 2$

   Answer: _____ [2]

6. Calculate

a. $\dfrac{3}{4} - \dfrac{2}{5}$

Answer: .... [2]

b. $\dfrac{5}{12} \times \dfrac{1}{4}$

Answer: .... [2]

c. $\dfrac{2}{5} \div \dfrac{4}{10}$

Answer: .... [2]

d. $1\frac{1}{8} + \frac{1}{6}$

Answer: .... [2]

7. Complete the following sequences:

a. 16   13   10   7   ....   [2]

b. 1   4   9   16   ....   [2]

8.

9 cm

6 cm

2 cm

10 cm
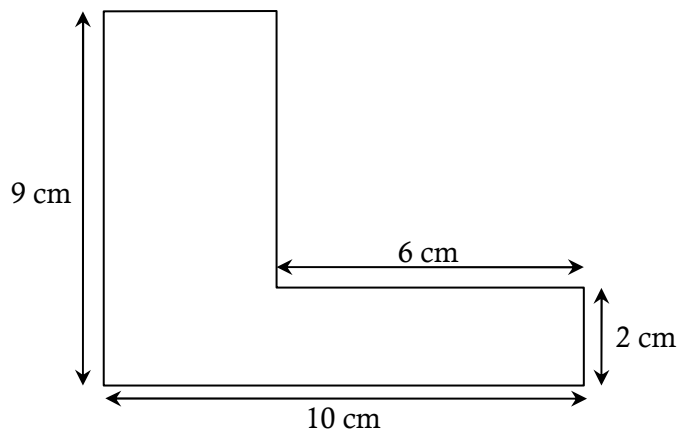
Area: .... [1]

Perimeter: .... [1]

Units [2]

9. Complete the following table. [6]

Fraction	%	Decimal
$\frac{1}{2}$		
	25%	
$\frac{1}{8}$		
	10%	
		0.2
$\frac{1}{3}$		

10. Calculate the following
    a. $\frac{1}{5}$ of 75

    Answer: _____ [1]

    b. $\frac{5}{8}$ of 32

    Answer: _____ [2]

    c. 17.5% of 63

    Answer: _____ [2]

11. Calculate the following
    a. 0.4×0.4

    Answer: _____ [1]

    b. $45 \div 0.5$

    Answer: _____ [1]

12. Simplify if possible
    a. $a + 2a + 4$

    Answer: .... [1]

    b. $4b - b + 5b$

    Answer: .... [1]

    c. $2a + 2c + a + 4c$

    Answer: .... [1]

    d. $x \times 2x \times 4d$

    Answer: .... [1]

    e. $ab + 6b + 2ab$

    Answer: .... [1]

    f. $-3c \times 5ct + 2c \times 6$

    Answer: .... [1]

13. Arrange these numbers in order, smallest first: 7.02, 7.12, 7.102, 7.012

    Answer: .... [2]

14. Daniela is travelling from London to Birmingham.
    a. The distance from London to Birmingham is 189.5 km. Convert the distance she is travelling to meters.

    Answer: .... [1]

    b. The journey takes 2.25 hours, if Daniela leaves London at 10.18 am, what time will she arrives in Birmingham?

    Answer: .... [1]

15. A box contains 2 blue pencils, 3 green pencils and 4 red pencils. If I pick a pencil from the box at random (with my eyes shut), what is the probability that
    a. I will pick out a green one?

Answer: .... [1]

    b. I will pick a pencil that isn't red?

Answer: .... [1]

16. The supermarket had a sale on their bottles of lemonade. Instead of selling them for 80p per bottle, they sold them for 55p per bottle.
    They sold 200 bottles of lemonade in a week.
    How much less did they take by selling at the lower price?

Answer: .... [3]

17. Alan is making squares out of matchsticks

    a. Fill in the table   [2]

Number of squares	1	2	3	4	5
Number of matchsticks					

    b. Write a formula for the number of matchsticks, *m*

Answer: .... [1]

END OF EXAMINATION