# 2010/2nd A

**Oundle School**

Your Name:

**Entrance Examination to the Second Form**      **Section A**

**Mathematics**      **30 Minutes**

*Write **ALL** of your working on this paper. No other paper may be used. The answers alone **are of no use.** Show enough working on each question to make it clear how you reached your answer.*

**You are NOT allowed to use a calculator for this section <u>NO CALCULATORS</u>**

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1. Work out $\frac{6}{5} - \frac{7}{4}$

    Answer………………………

2. Find $273 \times 1.06$

    Answer………………………

3. Divide 1835 by 5

    Answer………………………

4. Calculate $(38.6 + 15.1) \times 3$

    Answer………………………

5. Calculate each of the following

    (a) $5 \times -4$      Answer……………………………

    (b) $(5 - 8) \times -2$      Answer……………………………

    (c) $-6^2$      Answer……………………………

6.  If $x = -2, y = 4, z = -3$ find $xyz - 3x^2$

Answer…………………………

7.  Calculate $3\frac{1}{3} \times 3\frac{1}{5}$

Answer…………………………

8.  Continue the patterns, giving the next two terms each time

    (a)  2, 3, 5, 7, 11, 13, 17, ……… , ……….

    (b)  $x$,  $2x + 3$,  $3x - 6$,  $4x + 9$, ……...… , …...……

    (c)  2, 5, 10, 17, 26, 37, ……… , ……….

    (d)  36, 18, 12, 9, 6, 4, ……… , ……….

    (e)  20, 10, 5, 2.5, ……… , ……….

9.   Money in a bank account attracts interest at a rate of 5% per year. If I put £120 into this account, how much will it be worth after 2 years?

Answer……………………………

10.  If I stack 1000000 bricks at a rate of 1 brick per second, roughly how many days will it take to finish the task?

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Answer……………………………

11.  Work out   $\frac{3}{8} \times \frac{4}{3}$   as a fraction in its lowest terms

Answer……………………………

12. 6 men take 8 days to dig a hole. How long does it take

   (a)   3 men to dig 1 hole

   Answer……………………………

   (b)   2 men to dig 1 hole

   Answer……………………………

   (c)   2 men to dig 7 holes

   Answer……………………………

13. Two of the 3 angles in a triangle are $38.1°$ and $84.6°$. What is the value of the third angle?

   Answer……………………………

14. The mean (average) height of 4 girls is 1.63 m. What is the total height of the 4 girls?

Answer……………………………

15. How many different ways can you arrange the letters in the following word?

## ROBIN

*(you should show your method very clearly as we are more interested in HOW you did the problem than your answer!)*

# 2010/2nd B

## Oundle School

Your Name:

**Entrance Examination to the Second Form**          **Section B**

**Mathematics**          **30 Minutes**

*Write **ALL** of your working on this paper. No other paper may be used. The answers alone **are of no use.** Show enough working on each question to make it clear how you reached your answer.*

**You MAY use a calculator for this section     CALCULATORS ALLOWED**

1.      A ferry carries cars and lorries. For every lorry there are 3 cars. If the total number of cars and lorries on the ferry is 240, how many lorries are on the ferry?

Answer…………………………..

2.      Use your calculator to find the value of $\frac{27.8}{17.3-8.16}$. Write down all of the figures on your calculator display.

Answer……………………………

3.     What is my number?

(a)     *I think of a number, double it and add 3. The answer is 45.*

My number is=……………………………

(b) *I think of a number, add 6 and then halve it. The answer is 21.*

My number is=……………………………

4.     Find 12% of £20

Answer……………………………

5. Simplify each of the following

   (a)  $x + x + x + x + x + x$

   Answer……………………………

   (b)  $5 \times x \times 4 \times x$

   Answer……………………………

6. Work out how many numbers between 1 and 50 are multiples of 2, 3 and 4.

7.    What is the largest whole number that is a factor of both 64 and  24?

Answer……………………………

8.    If I score 38 out of 75 in a Mathematics test, what percentage did I score? Give your answer correct to one decimal place.

Answer……………………………

9.    Find the mean (average) of the following numbers, giving your answer to 1 decimal place.

4      5      5      7      8      10

Answer……………………………

10.  Find the missing numbers

..................× 10000000 = 51000

................÷ 0.5 = 30

11.  I walk along a road at a speed of 3.4 km per hour for two hours and then along another road at 2.8 km per hour for 20 minutes. Calculate how far I have walked in total, giving your answer to the nearest metre.

Answer…………………………

12.  A box measures $30cm \times 14cm \times 18cm$. How many $3cm \times 3cm \times 3cm$ cubes can you store in the box and still manage to fit a lid on top?