# 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 NO CALCULATORS**

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**

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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……..

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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……

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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

$\ldots\ldots\ldots\ldots\ldots\times 10000000 = 51000$

$\ldots\ldots\ldots\ldots\div 0.5 = 30$

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?