2010 / lst
OUNDLE SCHOOL

Name:

Mathematics Examination for Entrance to the First Form **Time : 1 hour**

This paper consists of two sections, Sections A and B. For entry into Oundle School, candidates are only expected to complete Section A, although you may tackle some of Section B if you want to and if you have time.

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 show how you are getting your answer.

NO CALCULATORS ALLOWED

SECTION A

1. Work out 49 + 83 Answer ……	2. Work out 124 – 76 Answer …….
3. Multiply 96 × 8 Answer …….	4. Work out 861 ÷ 7 Answer …….

5. Work out : 35% of £200.

Answer ……

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6. Write as a number : three million thirty thousand and thirty

Answer ……

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7. Work out :

(a) $(1 \times 2) \times (3 \times 4)$ Answer ……

(b) $(1 \times 2) + (3 \times 4)$ Answer …….

(c) $(1 \times 2) \times (3 + 4)$ Answer …….

(d) $(1 + 2) \times (3 \times 4)$ Answer …….

(e) $(1 + 2) \times (3 + 4)$ Answer …….

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8. At the Travelex foreign exchange counter, Tamwar converted his British pounds (£) into US dollars ($). For £200 he received $320.

Using the same exchange rate, answer the following questions.

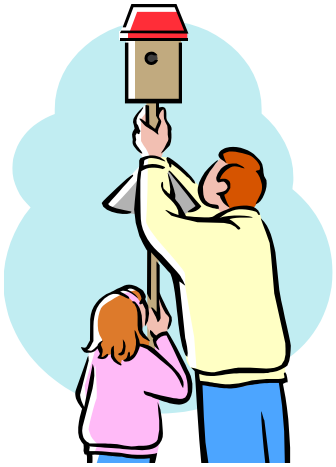
(a) Usain handed the cashier £500. How many US dollars did he receive ?

Answer …….

(b) Gerard received $480. How many pounds did he exchange ?

Answer : …….

9.



To feed the wild birds in my garden, I use $\frac{3}{4}$ of a small packet of bird seed every day.

(a) How many packets of seed will I need to feed the birds for 16 days ?

Answer .....

(b) For how many days can I feed the birds if I have 18 packets of seed ?

Answer .....

10. Peter and Greg challenged each other to a race over a distance of one mile. Peter took 5 minutes 20 seconds and Greg took 5.3 minutes.
Who won the race ?
(show all working !)

Answer ……..

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11. The train from Peterborough to Edinburgh takes 3 hours and 50 minutes. Last Thursday, Meera arrived in Edinburgh at 11.15 am, and her train ran exactly on time. At what time did her train leave Peterborough station ?

Answer …….

12. (a) Work out : $\frac{1}{6}$ of 546

Answer …….

(b) What is $\frac{4}{5}$ of 45 ?

Answer ……

(c) Write 0.07 as a fraction.

Answer …….

(d) Work out : $2\frac{1}{4} - 1\frac{1}{2}$

Answer ……

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13. Continue the sequences, giving the next two terms each time :

(a) –1, 4, 9, 14, …….. , ……

(b) 1, 2, 4, 8, …… , ……..

(c) 2, 3, 5, 8, 13, 21, …… , …….

(d) 0, 3, 8, 15, 24, 35, …… , ……

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14. In one of the following lists, the numbers are not all increasing.

A : $\frac{1}{5}$, 0.25 , $\frac{3}{10}$, 0.5

B : $\frac{3}{5}$, 0.7 , $\frac{4}{5}$, 1.5

C : $\frac{2}{5}$, 0.5 , $\frac{7}{10}$, 0.9

D : $\frac{3}{5}$, 0.5 , $\frac{4}{5}$, 0.9

E : $\frac{2}{5}$, 1.5 , $\frac{10}{5}$, 2.3

Which list is it ? Just write down the letter.
(For this question, we do not need to see any working).

Answer : .....

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15. You are told that 48 × 36 = 1728. Use this fact to write down the answers to

(a) 480 × 36 Answer .....

(b) 4.8 × 360 Answer .....

(c) 48 000 × 3.6 Answer .....

(d) 1 728 ÷ 72 Answer .....

(e) 3 456 ÷ 96 Answer .....

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16. When we square a number, we multiply it by itself.
For example : $2^2 = 2 \times 2 = 4$. We call 4 a perfect square.
When we cube a number, we multiply it by itself and then by itself again.
For example : $5^3 = 5 \times 5 \times 5 = 125$. We call 125 a perfect cube.

(a) Write down two other perfect squares (apart from 4).

Answer : …….

(b) Write down two other perfect cubes (apart from 125).

Answer : …….

(c) Write down one number between 2 and 100 which is both a perfect square and a perfect cube.

Answer : …….

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17. Mary is in a small class of 6 pupils, but was absent for the Maths test last week. The other five pupils scored an average of 72%. Mary wrote the test this week and, with her score included, the class average went up to 75%.

What mark did Mary score on the test ?

Answer …….

18.

5	4	9
10	6	2
3	8	7

This is a magic square. In a magic square, all the rows, columns and diagonals have the same total. In this magic square, they all add up to 18.

Using the numbers 1 – 9, complete the magic square below to make totals of 15.

HINT : USE PENCIL AND ERASER FIRST AND ONLY WRITE IN PEN WHEN YOU KNOW YOUR ANSWER IS CORRECT !!

	9	
		3

IF YOU ARE STRUGGLING, DO NOT SPEND TOO LONG ON THIS QUESTION !

END OF SECTION A

SECTION B

PLEASE REMEMBER THAT YOU MUST SHOW WORKING TO MAKE YOUR METHOD CLEAR IN EVERY QUESTION !

19. In a January sale, all prices were reduced by 20%. Peter paid £64 for a jacket. What was the price of the jacket before the sale ?

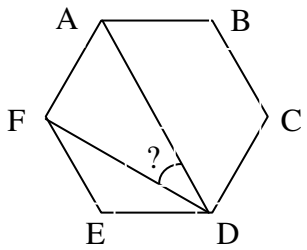
Answer ……..

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20. A newspaper has 64 pages. Which three pages are on the same sheet as page 12 ?

Answer : ……..

21.



ABCDEF is a regular hexagon. Work out the size (in degrees) of angle ADF.

Answer : …….^{o}

22.



Neither of the two photocopiers in our office works very well.
Photocopier A produces 1 'bad' copy for every 4 'good' ones.
Photocopier B produces 1 'bad' copy for every 5 'good' ones.
We need to produce 600 'good' copies of a poster.
$\frac{3}{5}$ of the 'good' copies will be produced by Photocopier A.

$\frac{2}{5}$ of the 'good' copies will be produced by Photocopier B.

How many copies in total (<u>including the 'bad' ones</u>) will be needed ?

Answer .....

23.

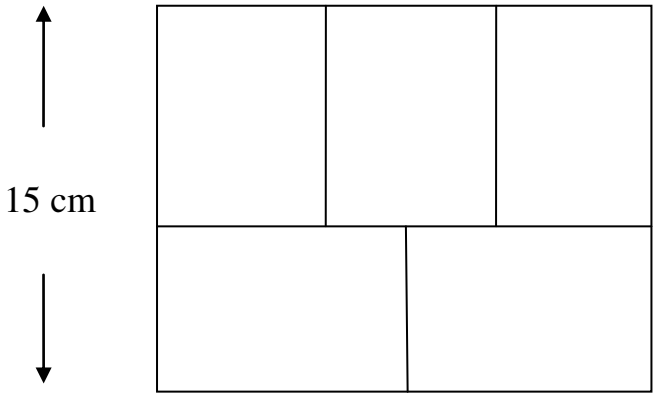




Tyson's favourite fruits are apples, oranges and bananas. At the grocer, he finds that four apples and two oranges cost £1.88 and that two oranges and four bananas cost £2.12. How much would he have to pay if he bought one apple, one orange and one banana ?

Answer : ……..

24. Five identical rectangles fit together as shown.



PLEASE NOTE THIS DIAGRAM IS <u>NOT</u> DRAWN TO SCALE

(so use of a ruler for 'measuring' will not help you at all)

What, in cm^2, is the total area covered by the rectangles ?

Answer : ……..

END