2010

SAMPLE MATHEMATICS TEST PAPER NUMBER 13

THE LATYMER SCHOOL

Time allowed: One hour

Read these instructions before you start:

- There are **50 questions** in this paper and each question is worth **one mark.** Work through the questions in the order that they appear. There may be some questions that you cannot do. Leave these and go on to the next question: you may have time to return to them at the end for another attempt.
- Use the space by each question to work out your answer. The blank pages may be used for working if there is not enough space by the question.
- You may use a pen or a pencil for this test.
- **Calculators are not allowed.**

This paper consists of **50 questions** with answers at the back.

LATYMER SCHOOL
MATHEMATICS ENTRY TEST 1 hour

2010

1. Write in figures the number that is '**one and three-quarter million**'.

Answer .....

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2. Work out

10000 – 264 –736

Answer .....

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3. **3000 ÷ 2.4 = 1250**
3000 ÷ ✣ = 2500

Answer ✣ = ...

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4. 

Last year **6** squirrels visited Joe's garden and ate **222** hazel nuts.
This year Joe has seen **7** squirrels in his garden.
How many nuts do you think they will eat? (there are lots on the tree)

Answer ..... nuts

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5. The snow last January was **12 inches** deep.
If **1 inch = 2.54 cm** how deep was the snow in **cm.** ?

Answer ..... cm.

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6. How many **hundredths** must be added to **5.9** to make **6.3** ?

Answer .....hundredths

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7. The digits of 635 are 6, 3 and 5 and they add up to $6 + 3 + 5 = 14$

Write down the **smallest 5 digit** number whose digits add up to **38.**

Answer .....

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8. **12 eggs** in a supermarket cost **£ 1.72**
12 eggs in the local shop cost **£ 2.08** (but they are really fresh)
How much more **per egg** do you pay in the shop ?

Answer .....pence

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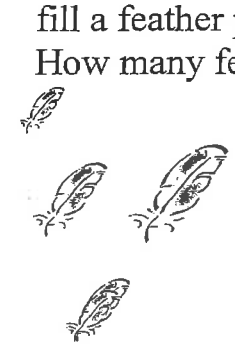
9. It is quite difficult to say " **30000** feathers on a thrush " especially if you're tired.
A thrush doesn't really have this number of feathers, but $\frac{1}{12}$ of that number would fill a feather pillow.
How many feathers are there in a feather pillow ?



Answer .....

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10. Alan should be gardening, but he finds a good book to read instead, and he reads it for **3½** hours.
A row of carrots would have taken him **42 min** to sow. How many rows could he have sown instead of reading ?

Answer .....rows

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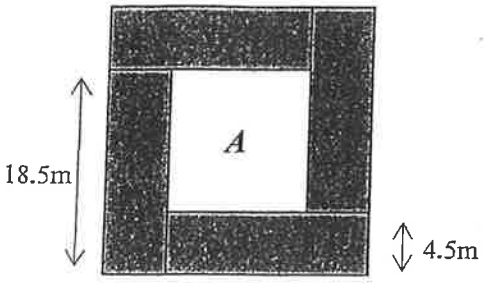
11. A new carpet costs **£ 39.99** per square metre.
How much would carpet for a large rectangular room **6 metres** x **5 metres** cost ?

Answer **£** .....



The diagram shows 4 grey rectangles joined together.

12. What is the distance round the outside of the shape ?

Answer ..... m

....

13. What is the area inside marked *A* ?

Answer.....sq. metres

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14. 

Mark's first lap in his racing car took **23.014 sec.**
His next lap was **2 hundredths** of a second **quicker.**
What was his next lap time ?

Answer .....sec.

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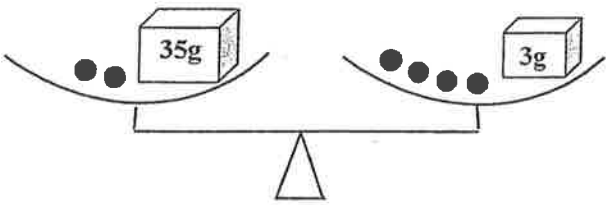
15. 

The scales balance, how much does one ● weigh ?

Answer ● weighs ..... g

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16. In the following **addition sum** what number does ☺ stand for ?

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  ☺
 ☺☺
 19☺
 ---
 2☺8
 ---
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Answer ☺ stands for .....

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17. Anne makes wooden toys. She takes **3hr 24 min** to make a toy train, and earns **£10 an hour.** How much is she paid for making the train ?

Answer £ .....

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18. 

Mr Tickle's arms can reach **15 metres** !
By exercising he can increase his reach by **12 %**.
How far can he reach after exercising ?

Answer .....m.

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19. 

$\frac{3}{5}$ ths of days in April were sunny. $\frac{1}{6}$ th were dry but windy.

The rest were rainy. How many days in April were rainy ?

Answer .....days

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20. 3 goes 33 times into the number 99.
How many times **will 3 go into** the number **24 x 28 x 2** ?

Answer .....times.

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21. What **percentage** of the **previous <u>question numbers</u>** are divisible by the number **6** ?

Answer .....%

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22. A CD has 19 tracks on it lasting a total time of **73min 14sec**.
However, Meimei can't play track 18 which lasts **3min 47sec**, and track 19 which lasts **2min 39sec** because they are both badly scratched.
How much listening time is there left ?

Answer .....min .....sec

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39. Jody wants to know how many sweets there are in a pack. She buys **6** packs and works out that the average number is **38.**
The table shows the results for **5 packs**, how many sweets were there in **pack 6**. ?

Number of sweets in a pack					
36	37	38	39	40	41
	✓	✓	✓		✓
	✓				

Answer .....

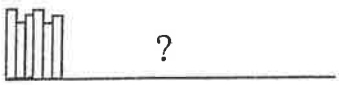
Max buys a set of second hand books for his bookshelf to make him look intelligent.

40. The books are **all 2.4cm** thick, and stand upright.
How many will fit onto a shelf that is **1.92 metres** long ?

Answer .....

....

41. If Max had only **20 books** that were **2.4cm thick, and used them all**, how many books **0.8cm thick** of which he had lots, would he need to fill the **rest of the shelf** ?



Answer .....

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42. A TV table in a store costs **£ 286**. If I buy the same, but have to crawl around the floor fitting it together myself at home then it would only cost **£139**.
I work for **3½ hours** to fit it together. How much **per hour** is my work worth ?

Answer **£** ..... per hr

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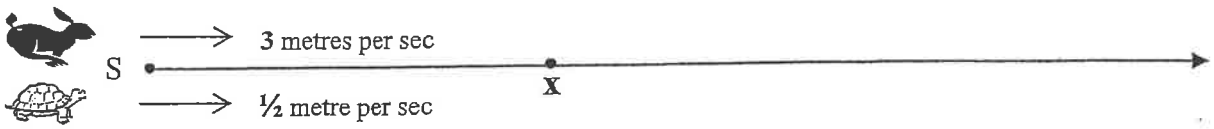
43. A shop had to pay a large fine because their packs of chicken were supposed to weigh **1kg** but were **85 grams less**.
What did their packs of chicken weigh in **kilograms** ?

Answer .....kg

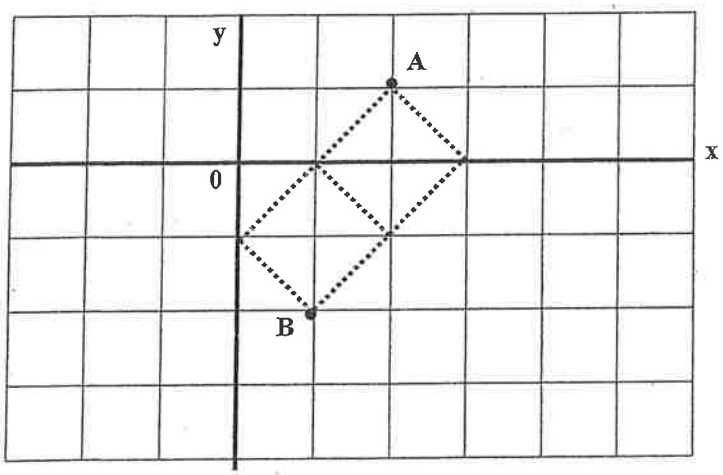
44.



Distance S to X is 4 metres.
The tortoise and the hare start together at **S**, when the tortoise reaches **X**, how ***far ahead*** is the hare ?

Answer .....m

45.



Two dotted squares are drawn on graph paper.

If **A** is the point **(16 , 8)**
What is the point **B** ?

Answer B is (,)

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46. What is the big angle marked **x** between the hands of a clock at **8 am ?**

Answer **x** =..... degrees

47.

Paint is mixed to a formula
6 parts white, **2** parts red, **7** parts blue
How many **millilitres** of **red** will there be in the tin ?

Answer .....ml

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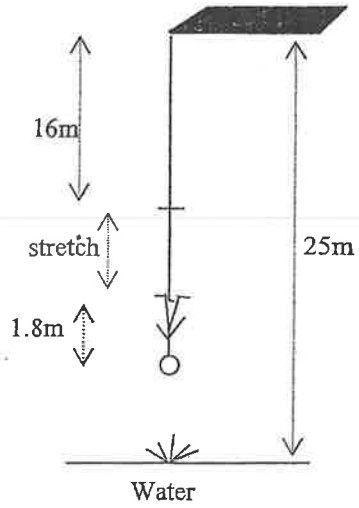
48. 

A bunjee jump is where a very foolish person has their feet tied to elastic and dives headfirst off a platform above water.



Jim is **1.8m** tall and very foolish.
When he jumps he stretches the elastic by $\frac{2}{5}$ ths of its original **16m** length.
If the platform is **25m** above the water.
How far in **metres** will his head stop above the water ?

Answer .....metres.

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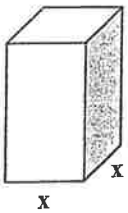
49. 

A cuboid has a **square** base and is **twice as tall as it is wide.**
If it has a volume of **54 cubic cm**. what is **x** ?

Answer **x** = ...cm.

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50. 

Every pod of the London Eye moves round **25cm** ↻ **every second** as the wheel rotates.
If the wheel takes **30 minutes** to rotate, what is its **circumference** in **metres** ?

Answer .....metres

End. You may go back and check your answers.

LATYMER SCHOOL MATHEMATICS ENTRY TEST 2010

ANSWERS AND EXAMINER'S COMMENTS

This paper produced a spread of marks from 1 to 48 out of 50, with a mean of 26, and a standard deviation of just over 9. It is never the intention to set a paper in which even the weakest candidates cannot score at least double figures, but incomplete answers to 'multi-part' questions, random placement of decimal points, and uncertainty with angles, area, and time were contributing factors to some of the more disappointing performances, and, as ever there was a plentiful supply of careless errors. It is also true that failure to see a 'quick' method or a nice connection between the numbers in a question meant that some felt under pressure to finish in time ,,,,,,, but the objective is. of course. to find those who think mathematically rather than those simply drilled in the mechanics of number crunching.

Answers to questions

1.	**1750000**	Most correct, but caused more trouble than expected.
2.	**9000**	Answered well: a few read 10000 as1000, and not many saw 264+736=1000.
3.*	**1.2**	4.8 a very popular error, but dividing by half as much gives twice the result.
4.	**259**	Answered well.
5.	**30.48**	A few numerical mistakes, but most answers were correct.
6.	**40**	A generous smattering of 4's and a few 400's.
7.*	**29999**	One thought this would be easy, but it proved otherwise.
8.*	**3**	Well done those who simply divided the extra 36p by 12 to get the answer.
9.	**2500**	A good response.
10.	**5**	A lot of correct answers here.
11.	**1199.70**	Answered well, but not always by '30x£40 – 30p', and some subtracted £30.
12.	**92**	Most were correct.
13.*	**196**	All sorts of answers..... '4x14', '4.5x18.5', etc. but few of them correct.
14.*	**22.994**	Badly done by so many; a tendency to add 0.02 sec, arriving at 23.034.
15.*	**16**	Why couldn't it be seen that 2 extra ● 's accounted for 32g ???.
16.	**6**	Answered well.
17.	**34**	Caused a few problems, some adding 2/5 of £24 rather than 2/5 of £10.
18.	**16.8**	Many good answers to this question.
19.	**7**	Possibly the best answered question on the paper.
20.	**448**	Quite good, though several missed the last step 'x2', so gave the ans. '224'.
21.	**15**	Nicely done by many.
22.*	**66min48sec**	Lot of errors working with time ... a 'decimal' approach giving '67min28sec.'
23.*	**125**	Very few correct; a horizontal line through the angle x would have helped. 35 degrees the answer given by most.

24.	**25**	Good: candidates should know however that '5.762 days' is an unlikely ans.
25.	**810**	A mixed response, but plenty correct in spite of this being a fiddly question.
26.*	**5.85**	A question involving time, cost, and no. of books. Many coped with two of these aspects but not all three. £1.17 a very popular offering. (then needs x5)
27.	**55**	Answered well.
28.	**26**	Good, but not quite so well done as no. 27 above.
29.	**3N + 1**	The preferred ans. is given. Many variations accepted. Answered quite well.
30.	**2272**	Not always by the simple method (x8), but a reasonable response.
31.*	**6**	25x5=125.....shortfall of 48....but every miss then costs 8 points !! not 3.
32.	**135**	Discriminated well, decimals causing confusion. 5.6:6.3 = 56:63=8:9 helps.
33.	**¼**	Good, although a small minority hadn't a clue. Equivalent fractions accepted.
34.	**30**	Quite a good response, except for minority mentioned above.
35.*	**8**	This was meant to discriminate, and it did. '40' was popular, but that is the angle, and needs to be divided by 5.
36.*	**31.5**	Candidates are still challenged by this type of 'shape and space' question.
37.	**9**	A mixed response , much guess work rather than writing down an equation.
38.*	**0.819**	Few could see that from ' x50 ' to ' ÷ 2 ' involved one step of ' ÷ 100' .
39.	**36**	Some left this, maybe aware of how long it might take. Several good though.
40.	**80**	Getting these two correct depended on whether candidates were able to manage decimals and the metric system. Approx 40% were able to do so.
41.	**180**	
42.*	**42**	Not well done: if only one worked out first how much was earned in ½ hour !
43.	**0.915**	Good! ..... clearly something was learned from last year's paper.
44.	**20**	Discriminated: many 'near misses' obtaining 24 and forgetting to subtract 4.
45.	**(8 , -16)**	Very mixed, perhaps rushed at this stage, but this was expected to be easy.
46.	**240**	This too caused more trouble than expected.
47.	**600**	A lot of good attempts; some decimal point problems, and others forgot to multiply their answer of 300 by 2. (as in '2 parts red').
48.*	**0.8**	Some notable successes here. One answer of ' -31.8m ' was a little scary.
49.*	**3**	Having got this far there was a fair chance of getting the answer, if only by trial and error.
50.	**450**	A number of excellent answers, and some who just saw 25 and 30 so multiplied them to give 750.

Questions marked * proved a little more difficult than most.

HB