

11

PLEASE NOTE:

**Papers 1 - 5 have been discontinued.
For 2009 the packs contain
6 Mathematics Papers numbered 6 – 11**

**SAMPLE TEST
FOR SALE**

Copyright of The Latymer School

THE LATYMER SCHOOL

MATHEMATICS ENTRANCE TEST 2008

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

2008

1. What number, when added to **593** would make **10000** ?

Answer

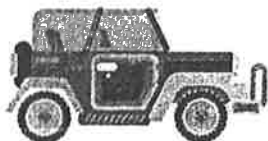
2. Every time you see * in this addition sum it stands for the same number.

$$\begin{array}{r} 3 * \\ + * 8 \\ \hline 1 2 6 \end{array}$$

What number does * stand for ?

Answer * =

3. Maria has a large car. She pays **£8 every day** she drives into London. She was afraid that this would rise to **£25 a day**. Maria drives into London on **150 days** during the year; how much extra a year would this have cost her ?



Answer £

4. Work out **12 x £99.99**

Answer £

5. Here are some numbers

0.301 0.076 0.29 0.4 0.963

What answer do you get if you take away the smallest from the largest ?

Answer

6. $216 \times 1937 = 418392$
 $216 \times 1939 = \rightleftarrows$

Answer \rightleftarrows =

7. Jess is very naughty, she is given **£1.95 every day** for a school lunch, but **every day** buys chips for **85p**, a fizzy drink for **48p** , and **once a week** some chocolate for **£1.20**.
 How much money does she have left over at the end of each five day week ?

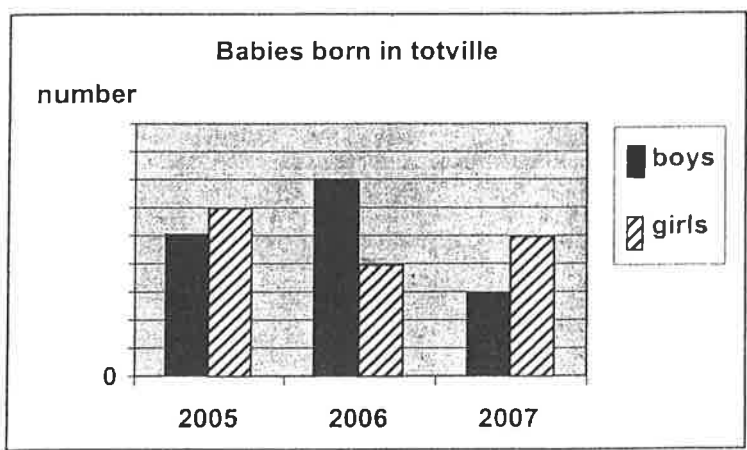
Answer £

8. A hummingbird beats its wings **55 times** a second.
 How many times does it beat its wings whilst sipping nectar from a flower for **4.2 seconds** ?



Answertimes

9. In **2006** there were **45 more** boys born in Totville than there were girls.
 How many **girls** were born in **2007** ?



Answer

10. Nazir has broken his arm so he is allowed **15% more** time for a test that normally lasts **40 minutes**.
 How long does Nazir get ?

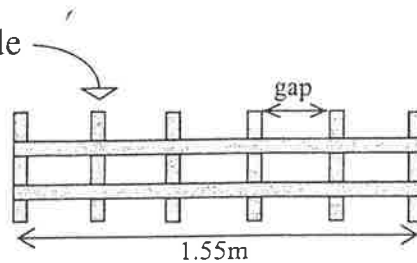


Answermin

11. Add one half of **6.1** to one half of **3.9**

Answer

12. If each post in the fence is **10cm** wide and the whole fence is **1.55m** wide, how wide is the gap if every gap is the same?



Answercm

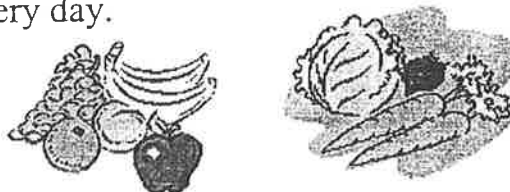
13. Ned has lots of **6**'s and **7**'s which he can add together in any way he likes. Put a ring round any of the following numbers that he **cannot** make exactly.

29 30 31 32 33

14. Think of a number **between 11 and 16** (don't forget it), subtract **8** from it, multiply your answer by **6** , add **20** , divide your new answer by **2** ,now subtract **three times the number you first thought of**.

What number do you now have ?

15. Maddy eats **5** portions of fruit and veg every day. How many portions will she eat altogether in **all of June, July and August** ?



Answerportions

16. Children's tickets for a pantomime **cost half** as much as adult's. **4** adults and **6** children buy tickets for a total of **£39.20** How much does an **adult's** ticket cost ?

Answer £

17. What is \odot if $\frac{\odot}{10} = \frac{21}{35}$

Answer $\odot = \dots\dots\dots$

18. Put a ring round the odd one out(it can be done without working them all out !)

- 36 x 18 72 x 9 12 x 64 12 x 54 6 x 108

19. Jim is careful about spending his pension and always looks for special offers:



juice
~~£1.29~~ each
 or 3 for the
price of two



butter
~~87p~~
 $\frac{1}{3}$ off this price



bread
~~98p~~
 $\frac{1}{2}$ this price

Jim buys **3 cartons** of juice, **one pack** of butter and **one loaf** of bread.
 How much does it cost him ?

Answer **£**

In the next two questions ϕ means 'multiply the second number by itself, then subtract the first number'.

so $3 \phi 5 = 5 \times 5 - 3 = 22$

20. Work out $7 \phi 8$

Answer

21. Find \blacktriangle if $4 \phi \blacktriangle = 77$

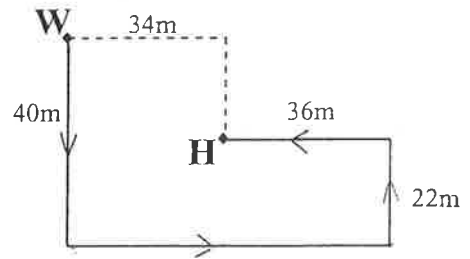
Answer $\blacktriangle = \dots\dots\dots$



22.



Dennis runs at **4 metres per second**, (another broken window) How long does he take to get from **W**, following the arrows to his secret hideout **H**?



Answerseconds

As an example, the digits of the number 361 are 3, 6, and 1, and they add up to 10.

23. Write down the **largest 4 digit number** whose digits add up to **29**.

Answer

24. Write down the **smallest 4 digit number** which can be **divided exactly by 7**.

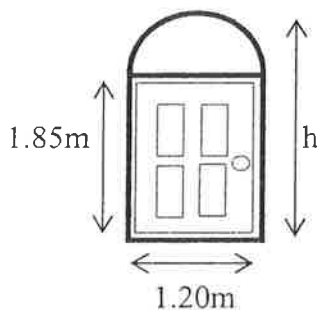
Answer

25. Wayne's times for the hurdles this year have been
14.7 14.6 14.1 14.3 14.3 (given in seconds)
 What is Wayne's average time for the hurdles ?



Answerseconds

26.



The diagram shows a door in a **rectangular** frame, and a **semi-circular** window on top.

What is the height **h** in metres ?

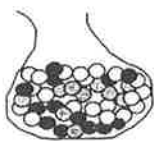
Answer **h** =m



27. Gary notices that a bag of crisps weighs only **25 grams**. How many bags would he need for **1 kilogram** of crisps ?

Answerbags

28. A bag of **200** marbles is shared between **14** children at a party so that each gets as many as possible, but each gets the same. How many marbles are left over ?



Answermarbles.

29. **8020** cars **every hour** can normally pass a point on the motorway. But yesterday a lane was closed at **10am** which meant that only **100 cars per minute** could pass that point. How many cars were queuing at **10:30am** ?



Answercars

30. If worked out (but better not to !), **only one** of the following ends in a **1**. Put a ring round the one it must be.

389x256 477x3228 591x634 739x5429 1627x445

31. A matchstick is **3.1 cm** long. **Ten thousand** of them are placed end to end in a straight line. How long is this line in **metres** ?

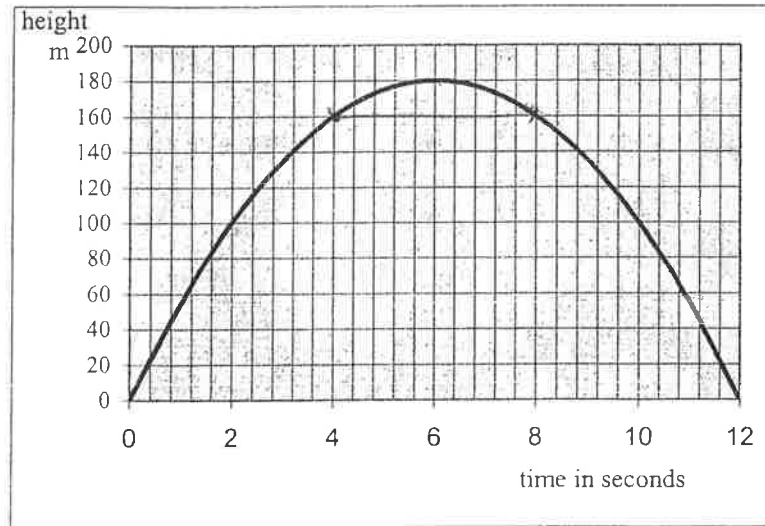
Answermetres

32.

$$\blacksquare \div 20 = 4760$$

$$\blacksquare \div 200 = ?$$

Answer ? =



The graph shows how many metres high a rocket is after so many seconds.

33. How high is the rocket after **2** seconds ?

Answerm

34. What is the greatest height reached by the rocket ?

Answerm

35. For how long is the rocket **above 160m** ?

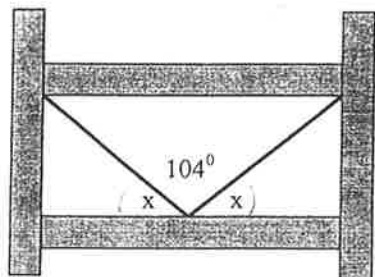
Answerseconds

36. The meat takes **1 hour 35 min** to cook in the oven. The potatoes take **50 min** in the same oven and must finish at the same time as the meat.
If the meat is put in the oven at **12:05pm**, what time must the potatoes be put in ?



Answerpm

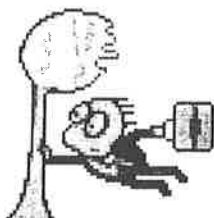
37.



What is each of the angles marked x in degrees ?

Answer $x = \dots\dots\dots$ degrees

38.



On a stormy day **5%** of trees in a wood blew down.
If **40** trees blew down, how many were left standing ?

Answertrees.

The table below shows how much it costs to print digital photos in a shop.

| Number of photos to be printed | 1 - 49 | 50 - 99 | 100 - 149 | 150 or more |
|--------------------------------|--------|---------|-----------|-------------|
| Size 6 x 4 <u>cost each</u> | 25p | 20p | 12p | 7p |
| Size 7 x 5 <u>cost each</u> | 40p | 35p | 20p | 10p |

39. Jane wants **60** of her photos printed, size **7 x 5** . How much will this cost ?

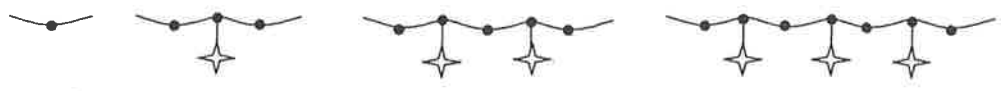


Answer £.....

40. Amir can only afford **£5.00** to have his photos printed, all size **6 x 4**.
How many can he get printed for this much ?

Answerphotos

Joseph makes beautiful necklaces in different lengths using rubies (•) and diamonds (✧). Here is a sequence of some of them



He can work out what he will need for the necklace he is making

| | | | | | | |
|----------|---|---|---|---|---|-------|
| Diamonds | ✧ | 0 | 1 | 2 | 3 | |
| Rubies | • | 1 | 3 | 5 | 7 | |

41. How many **rubies** will be needed with **9 diamonds** ?

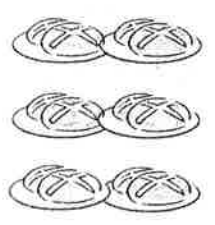
Answerrubies.

.....
 42. How many **diamonds** are needed to go with **37 rubies** ? (very expensive !)

Answer.....diamonds

.....
 43. If the number of diamonds Joseph uses is **D** and the number of rubies is **R** , finish the formula

R =



These ingredients are needed for making **12** very yummy buns.

- 150g flour
- 75g butter
- 75g caster sugar
- 2 eggs
- 120g dried fruit

44. Jill would like to make **8** buns, how much **flour** will she need ?

Answerg

.....
 45. Jack wants to make **15** buns, how much **dried fruit** will he need ?

Answerg

46. What **percentage** of the words in this question including the word Answer below have only two letters in them.

Answer

47. Luke and Lucy share the playstation which is allowed to be on for **2 hours** on a Saturday.
 Luke is on it for $\frac{7}{15}$ ths of this time; for how many **minutes** is Lucy on it?

Answerminutes

48. There are **12 boys** in a class of **30 pupils**.
7 boys play a musical instrument, but **17 pupils** in the class do not play any instrument at all.
 How many **girls** play a musical instrument ?



Answergirls

49.

$$\star + \blacktriangledown = 39$$

$$\star - \blacktriangledown = 7$$

Answer $\star = \dots\dots\dots$

50. Which number, **times itself**, is **closest** to **0.40** ?
 Ring the answer.

- 0.02 0.16 0.20 0.50 0.60



LATYMER SCHOOL MATHEMATICS ENTRY TEST

ANSWERS AND COMMENTS TO 2008 TEST

General remarks

This seemed to be a fair paper, discriminating well, with marks **ranging from 5 to 50** and producing a **mean of 31.2**. Most candidates appeared to have time to attempt all questions. There has been a real improvement in candidates' response to fractions and percentages over the last couple of years.

Two things really tested the markers, the first was qu.43 where a number of algebraic alternatives were accepted; the second was very poor writing from some candidates making it almost impossible to distinguish between 4, 7 or a 9. Scripts must be clearer in this respect if candidates are to receive due credit. More care also needs to be taken in transferring the answer from the working to the answer space.

Answers and comments on individual questions

- | | | |
|-----|----------------|--|
| 1. | 9407 | Mostly correct, but several misread 10000 as 1000. |
| 2. | 4 | Answered very well. |
| 3* | 2550 | Some had difficulty here; perhaps a rather 'wordy' question to meet early on. |
| 4. | £1199.88 | Generally correct, though few did $12 \times £100 = 12p$. It's always worth considering the sense of one's answer....£1.18 for example! |
| 5. | 0.887 | Some took 0.29 to be the smallest, as 2 is smaller than 3, <u>7</u> , 4, or 9! |
| 6. | 418824 | Answered well. |
| 7. | £1.90 | Many pleasing answers to this 'complicated' little question. |
| 8. | 231 | Mostly good, but a wide variation in other answers from 4 to 22110. The latter is due to errors in multiplication, but where does '4' come from ??? |
| 9. | 75 | Good! |
| 10. | 46 | A 2-stage question, the majority getting '46', but some leaving the answer as '6', forgetting to add the '40'. |
| 11. | 5 | Well done the few candidates who realised this was 'one half of ten'. |
| 12* | 19cm | 31cm a common error, neglecting the width of the posts. Again, just give a little thought to the sense of the answer; a 298cm gap in a 155cm fence for example! |
| 13* | 29 | Some candidates were all at 6's and 7's with this question. |
| 14. | -14 | Several answers of just '14' which of course was wrong. |
| 15. | 460 | Generally answered well. |
| 16* | £5.60 | Much complicated 'guess work'. Few realised that in the context of this question $4 \text{ adults} + 6 \text{ children} = 7 \text{ adults}$, hence an easy division. |
| 17. | 6 | Discriminated well, '7' a popular error, maybe because 21 and 35 divisible by 7? |
| 18. | 12×64 | A pleasing response to this question. <i>multiple of 9</i> |
| 19. | £3.65 | Became more of a literacy question than mathematics with careless reading of ' <u>1/3 off this price</u> ' to be ' <u>1/3 of this price</u> '. Hence £3.36 a common error. |
| 20. | 57 | Both 20 and 21 were answered well, in spite of the fact that a square root |
| 21. | 9 | was required for no. 21. |
| 22. | 42 | A varied response: 168 (the half way stage) commonly given as the answer. |
| 23. | 9992 | Mostly correct. The wrong answer 2999 appeared a few times. |
| 24* | 1001 | Harder than no.23, this discriminated well. |
| 25. | 14.4 | Some confusion with 'remainders' and decimal division, so <u>14.2</u> was a common error arising from 14 and <u>two-fifths</u> . |
| 26. | 2.45 | Generally correct, though some still have difficulty with this kind of question. |
| 27. | 40 | Answered well. |



| | | |
|-----|----------|---|
| 28. | 4 | Mostly correct. However, the wrong answer 14 appeared a few times 14 x 14 = 196, then forgetting to subtract 196 from 200. |
| 29* | 1010 | Hard, as expected: a question that could not be rushed. |
| 30. | 739x5429 | Easy this principle seems to be well understood. |
| 31* | 310m | Many decimal point errors, which together with some understanding of the metric system, is just what this question was testing. The decimal point itself must be clearly placed. |
| 32. | 476 | } Good; expected to be harder. The three parts of this graph question were answered with very few errors. |
| 33. | 100 | |
| 34. | 180 | |
| 35. | 4 | |
| 36. | 12:50 | Some burnt potatoes, but most candidates proved themselves more than capable of helping in the kitchen. |
| 37. | 38 | Discriminated well. Many candidates simply see two angles and assume that each is 45 degrees. |
| 38. | 760 | A pleasing number of correct answers. Work on % has improved. |
| 39. | £21 | Failure to convert pence to £ , so £2100 was often seen. |
| 40* | 20 | One had to work out where to look in the table. Show me where to get 10650 photos for £5 ! |
| 41. | 19 | Often long-winded, but usually correct. |
| 42. | 18 | A very mixed response; some did not have a clue. |
| 43. | 2D+1 | Any equivalent algebraic expression accepted, though 2D+1 much preferred to D ² +1, Dx ² +1, d ² +1.....etc. |
| 44. | 100g | Some misreading of the question; ingredients were given for 12 buns, not 1 bun: nevertheless numbers 44 and 45 were generally answered well. |
| 45. | 150g | |
| 46. | 15 | |
| 47. | 64 | More correct responses than anticipated: work on fractions has improved. |
| 48. | 6 | Answered well by those candidates who reached this question with time to think. A select few even used a Venn Diagram which is to be applauded. |
| 49* | 23 | Some correct answers by trial and error, which takes time; otherwise they struggled with this one. |
| 50* | 0.60 | Just a few good answers, but many opted for the obvious wrong choice 0.20. |

Questions marked * are those which appeared to cause the greater difficulty.