Tiffin School 11+ Stage One and Two Tests: Maths - Illustrative questions

Tiffin School does not publish its own past papers. We have, however, provided below some illustrative test questions for you and your son to go through so you can get a feel for the format and level of difficulty of the questions in the Stage One and Stage Two Maths tests.

The papers change significantly from year to year; changes usually include the number of questions on each paper, the time allocated for the different papers, and the types of questions assessed. Every year, completely new papers are written.

There are many past 11+ papers from other selective schools and other sources freely available on the internet. Although some exam paper practice may be helpful, we do not recommend any particular papers or providers.

When setting the admissions tests in Maths, Tiffin School assumes that those sitting the tests will have completed the National Curriculum in Maths for Year 5 students when they sit the tests. Tiffin School does not expect students to have covered topics beyond this. However, the admissions tests will include some questions in unfamiliar formats that will provide boys with the opportunity to demonstrate their adaptability. The tests identify boys who enjoy and are confident working with numbers and problem-solving.

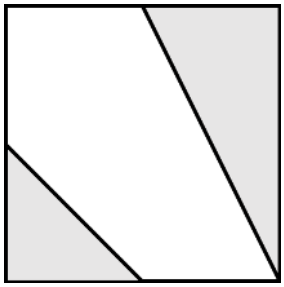
Illustrative questions

1. Work out $2023 - 87$

2. Giving your answer as a fraction in its simplest form, work out $\frac{1}{6} + \frac{4}{9}$

3. The diagram below shows a square divided into 3 regions by two straight lines. One straight line joins the midpoint of the left edge to the midpoint of the bottom edge. One straight line joins the midpoint of the top edge to the bottom right corner.

   What fraction of the square is NOT shaded?

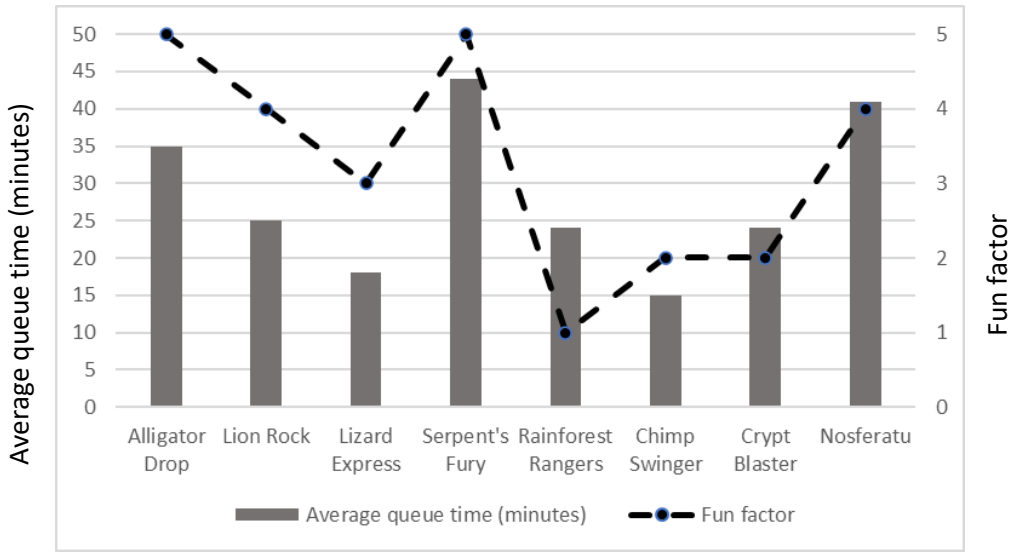


4. The diagram below shows a stag beetle next to a ruler marked in centimetres and millimetres. The diagram is NOT TO SCALE.

How long, in millimetres, is the stag beetle?

5. Two numbers add together to give a total of 20 and multiply together to give 51. What are the two numbers?

6. The chart below shows some information about rides in a theme park.



What is the difference, in minutes, between the average queue times of the ride with the longest average queue time and the ride with the lowest fun factor?

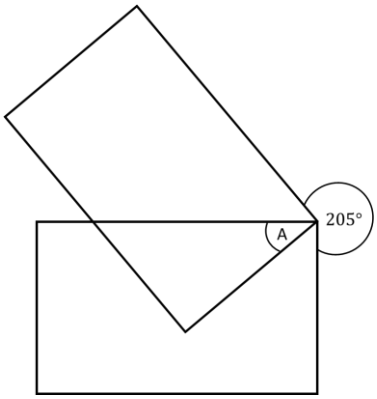
7. Ephrem the electrician buys a 5 metre length of copper wire. He cuts four pieces of lengths 1.2m, 2.03m, 85cm and 123mm to fix some wiring in his house. How much copper wire, in metres, does Ephrem have left over?

8. Find the missing fraction, given by ? , in this sequence:

$$\frac{1}{15},\ \frac{1}{5},\ \frac{1}{3},\ ?,\ \frac{3}{5}$$

9. Packets of muffin mix come in small, medium and large. A small packet makes 12 muffins. Four small packets make as many muffins as three medium packets and five medium packets make as many muffins as two large packets.
How many muffins does one large packet of muffin mix make?

10. The diagram below shows two identical rectangles joined at one corner. The reflex angle formed by the two external edges of the rectangles at the common corner is $205°$ as shown. The diagram is NOT TO SCALE.



Find the size, in degrees, of the angle marked A.

11. Kwame really likes chips. He ate exactly 22 chips every day for the whole of the year 2019. How many chips did Kwame eat in the whole of the year 2019?

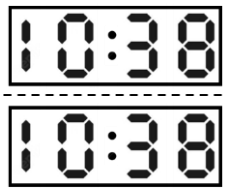
12. Oliver flies from London to Los Angeles. His flight leaves London at 9.50 am (London time) and the flight takes 11 hours and 15 minutes. The time in London is 8 hours ahead of the time in Los Angeles. At what time, in Los Angeles time, does Oliver arrive in Los Angeles? Give your answer using the 24 hour clock.

13. Idris has a box of milk and dark chocolates. For every 5 milk chocolates, there are 3 dark chocolates. There are 8 more milk chocolates than there are dark chocolates. How many chocolates are there in the whole box?

14. A rectangle has an area of 48cm^2. Its length and width are a whole number of centimetres. What is the smallest perimeter, in centimetres, that the rectangle could have?

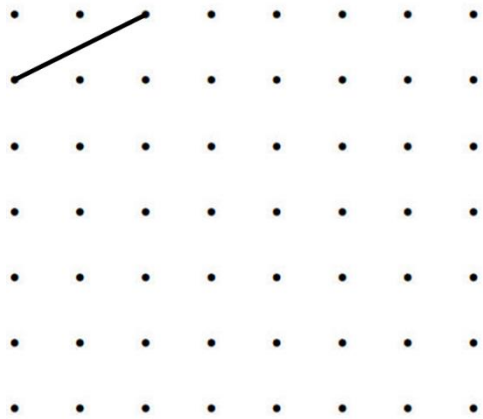
15. The display on Hakim's digital clock uses the digits shown below.

Hakim put his digital clock on a mirror. When he looked at it at 10:38, he noticed that the reflection also showed 10:38 as seen in the diagram below.



How long, in minutes, was it to the next time that the clock display and its reflection showed the same time?

16. A kite is drawn by joining dots on a square spotty grid. The area of the kite is 6 squares. The diagram below shows one of the sides of the kite. Draw the other three sides of the kite on the copy of the diagram on the answer sheet.



17. On November 12th, Kieran will be 1000 months old. In which month was Kieran born?

A	B	C	D	E	F
March	April	June	July	August	September

18. What is the largest three digit multiple of 6, two of whose digits are 6 and 8?

Use the information in the table below to answer questions 19

This table shows the total length, in miles, of roads in England by road type and region.

Region	Motor ways	Rural 'A' roads	Urban 'A' roads	Rural 'B' roads	Urban 'B' roads	Rural 'C' and 'U' roads	Urban 'C' and 'U' roads	Total all roads
East Midlands	200	3,233	712	1,605	388	16,525	9,291	**31,954**
East of England	265	3,207	802	2,877	448	21,784	10,911	**40,294**
London	60	127	1,625	26	479	318	12,173	**14,808**
North East	58	1,361	447	1,086	257	6,463	6,788	**16,461**
North West	657	2,419	1,671	1,261	764	12,285	18,346	**37,404**
South East	660	3,896	1,414	2,293	782	21,377	18,257	**48,680**
South West	328	4,267	735	2,803	489	31,272	10,673	**50,566**
West Midlands	445	2,556	1,066	1,880	640	14,426	12,441	**33,454**
Yorkshire & Humber	445	2,392	1,012	1,437	478	13,594	12,767	**32,124**
All England	**1,703**	**11,943**	**4,267**	**7,443**	**2,292**	**71,397**	**54,064**	**153,111**

Source: Department for Transport – 2021

19. How many regions have less than 2500 miles of Rural 'A' roads but more than 400 miles of Urban 'B' roads?

20. In the following addition, each of the letters X, Y and Z represents a different digit.

$$\begin{array}{r} X\,Y\,Z \\ +\,X\,Z\,Y \\ \hline Z\,Y\,X \\ \hline \end{array}$$

What is the number $X\,Y\,Z$?

Maths Test Practicalities:

In the Stage One Maths Test, you must answer carefully on an OMR sheet which will then be automatically marked by a computer. Examples of this are shown below.

In the Stage Two Maths Test you write out your answers on a normal piece of paper.

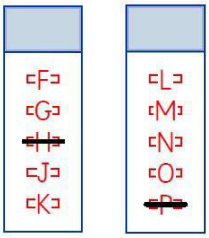
For both tests, you will have plenty of space for rough working out, but this will not be checked or marked.

Explanation of how the OMR sheets for the Stage One Test works:

For some questions you will choose the answer from some options (multiple choice questions). Below are two examples of how you should would mark your answer:

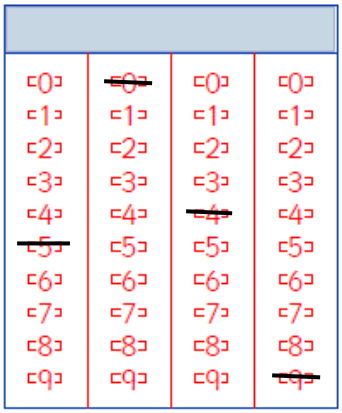
In the first example, the answer selected is the third option H. For the second example, the answer selected is last option P.

A line is drawn through the letter. It may go outside the red brackets but MUST NOT cross the outer blue line.

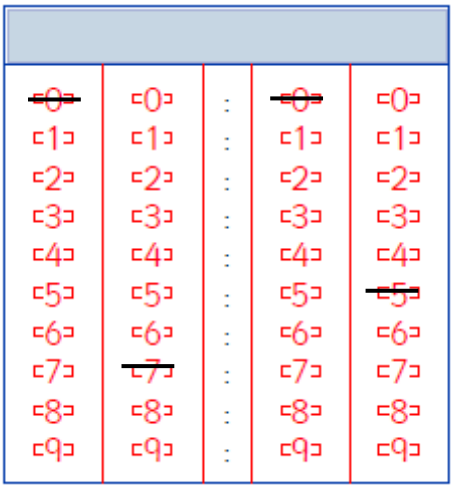


For some questions the answers may be numerical. To record a numerical answer, the columns given represent hundreds, tens and units, so an answer of 7 should be marked as:

An answer of 5049 should be marked as:



A time answer would be given like a digital clock, so an answer of 5 mins past 7 (07:05) would be given as:



Again with all answers it is important that the line stays within the intended column, but it does not matter if the line crosses the bracket around each number.

All the best!