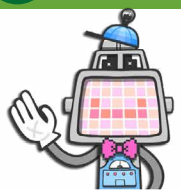


MATHS CHALLENGE Y

RALPH: Greetings - Maths Challengers - and welcome to the ultimate mental maths quiz, the quiz that helps you know your numerals, sort out your signs and tackle your tables! Now you should have a pencil and paper handy to write down all those correct answers.

OK, Matrix, my mathematical friend, start us off with a maths meaning. What mathematical expression have you got for us today?

MATRIX: **Perimeter**. In maths the 'perimeter' of a shape is the distance around the outside. So to find out the perimeter of a rectangle, or a square, or a triangle, you add together the lengths of all the sides.

RALPH: So the perimeter of a four centimetre square must be 4 + 4 + 4 + 4 centimetres.

MATRIX: Precisely! Or put it another way 4 multiplied by 4, which is 16 centimetres.

RALPH: Right, now it's time for...

Round 1 - Beat the clock!

Pencils at that the ready? Listen carefully for our mathematical word...

MATRIX: Perimeter.

RALPH: Here's question number 1. What is the perimeter of a 7 centimetre square? What is the perimeter - the distance around the outside of - a 7cm square?

Number 2. How many metres in half a kilometre? How many metres make up half a kilometre?

Question number 3. How many seconds are there in three-quarters of a minute? Three-quarters of a minute: how many seconds?

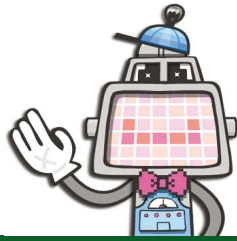
Fourth question. If T - 4 = 7, what is T? What is T if T - 4 = 7?

Question 5. How many 10p coins make up £4.70? How many 10p coins do you have to have to make £4.70?

Question number 6. What is double 1.6? Double 1.6 - what is it?

Seventh question. How many faces as a tetrahedron? How many faces has a tetrahedron got?

Question 8. What is 10% of £5? 10% of £5 - how much is it?



Question number 9. How many degrees in a right angle? A right angle is how many degrees?

And finally - number 10. What is half the product of 3 and 10? What is half of 3 multiplied by 10?

Well, there we are then! That's the end of round one! Let's see how many got it right. Answers please, Matrix, starting with...

Number 1.

MATRIX: Answer: 28cm.

RALPH: Number 2.
MATRIX: Answer: 500.

RALPH: Number 3.
MATRIX: Answer: 45.

RALPH: Number 4.
MATRIX: Answer: 11.

RALPH: Number 5.
MATRIX: Answer: 47.

RALPH: Number 6.
MATRIX: Answer: 3.2.

RALPH: Number 7.
MATRIX: Answer: 4.

RALPH: Number 8.
MATRIX: Answer: 50p.

RALPH: Number 9.
MATRIX: Answer: 90.

RALPH: And finally, number 10.
MATRIX: Answer: 15.

RALPH: There we are then. Give yourself one point for every correct answer. Add up your score for Round 1.

Well, you should all have your first round scores worked out now. And that leaves us clear to get going on...

Round 2 - The Maths Challenge Great British Dash!

The idea is simple - you have to visit each of the countries that make up Great Britain, which are:

MATRIX: England, Scotland and Wales!

RALPH: That's right Matrix now you have to make one journey by plane one by train and one by coach. So get ready for the **Maths Challenge Great British Dash**!

OK you decide to start your journey in London and you begin by taking a plane from there to Glasgow. The plane takes off at 9:50am; the journey lasts for one hour 50 minutes. So question one is this. What time does the plane land at Glasgow airport? Listen again. The plane takes off at 9:50am; the journey takes one hour 50 minutes. What time does the plane land? Your time starts now.

Matrix - tell us what time did the plane land...

MATRIX: The plane leaves at 9:50am. It arrives at Glasgow airport one hour 50 minutes later. Which means the time it lands is 11:40am.

RALPH: 11:40am, that's the answer - although you can also have '20 minutes to 12' or even '20 minutes to midday' if that's how you have written it down. Any of those three will get you 5 points; zero points for anything else.

OK - so now you are in Glasgow in Scotland and you've got to travel to somewhere in Wales next. You see that there's a fast train leaving for Cardiff at 1:55pm. It's going to take three hours 45 minutes to get there. So this is question 2. What time will you arrive in Cardiff? The train leaves Glasgow at 1:55pm. The journey takes three hours 45 minutes. When do you arrive in Cardiff? Work out the time in your head and write down the answer.

Done that? I hope so because we haven't got time to hang around! Matrix - put us out of our misery!

MATRIX: The train left Glasgow at 1:55pm. It arrived in Cardiff three hours 45 minutes later. And the time of arrival was - 5:40pm.

RALPH: 5:40pm is the answer we want - but we'll accept '20 to 6' or '20 minutes to 6'. Five points if you got it right. And now you've really got to move because there's a coach leaving Cardiff bus station to take you back to London. But it leaves at 5:55pm - you can just make it if you hurry!

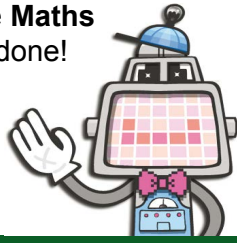
You get on the coach at 5:55pm. You can sit back and relax because the coach is going to take three hours and five minutes to reach London. What time are you going to arrive there? Listen again. The coach left at 5:55pm and takes three hours five minutes. What time will you reach London? Work out your answer now.

Well, Matrix, what time did the coach arrive in London?

MATRIX: A coach leaving Cardiff at 5.55pm and arriving in London three hours 5 minutes later would arrive exactly at 9pm.

RALPH: 9pm it is then. Five points if you've got that answer. If you wrote something other than that down, no points are all. So that brings us to the end of the **Maths Challenge Great British Dash**. If you've got all the questions right, well done! Work out your total score for the quiz so far.

Right, how are you getting on so far? Don't worry if your points total



seems a bit low at the moment because there are 20 points up the grabs in this round, that's 10 points each correct answer so let's start.

Round 3 – Juggling numbers!

Now you probably realised, more points means it's more difficult. So listen carefully while I'll explain what you have to do. Matrix is going to produce three numbers. Now those 3 numbers have to be juggled around - added subtracted multiplied or divided - until you find a way of making the target number. Got it? Write down the three numbers and the target number. So pick up your pencils and get ready for Matrix to come up with the first three numbers.

MATRIX: 2, 7 and 12.

RALPH: 2, 7 and 12. And what about the target number?

MATRIX: 2.

RALPH: 2. OK then you've got one minute's juggling time and you've got to find a way of using 2, 7 and 12 to make the target number 2. Start juggling those numbers now.

Sorry - no more time. I hope you've written down your answer because here comes Matrix to tell us how it should be done.

MATRIX: 12 + 2 = 14; 14 ÷ 7 = 2.

RALPH: If that's the answer you wrote down then you can award yourself 10 points. If you think you've found another way of doing it ask your teacher to check it later on. Matrix, give us our second batch of numbers please.

MATRIX: The numbers are 7, 10 and 8.

RALPH: Write them down: 7, 10 and 8. And what's the target number this time?

MATRIX: 46.

RALPH: So find a way of juggling 7, 10 and 8 that lets you end up with 46. You've got 30 seconds this time to come up with an answer. Start juggling those numbers now.

Make sure you've written down your answer because Matrix is eager to tell is how he did it. Go, Matrix!

MATRIX: 7 x 8 = 56; 56 - 10 = 46.

RALPH: That one was a bit easier, provided you remember that 7 x 8 is 56 of course! Easy or not you still get 10 points for it. If you found another way ask your teacher to check it. Time for you to work out your total score, because that was the last question for today. I wonder how you did and if your scores are any higher than before. Until the next Maths Challenge quiz it's time for Matrix and I to say...

MATRIX: Keep those mental muscles working, Maths Challengers! Goodbye!

