Monday

Mental Maths - Right or Wrong?

527.4 + 105.7 = 633.1   11.97 + 483.44 = **495.41**
56.06 + 634.95 = **691.01**

53.6 - 20.8 = **32.8**   8.35 – 1.09 = **7.26**   701.44 – 2.99 = **698.45**

10% of 210 = **21**   15% of 3160 = **474**   20% of 10.4 = 2.08

Extra

The sum is 7 ½.

Obair Àireamhachd an Latha | Daily Numeracy Work – Equations

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1) 45 + Δ = 98 Δ= 53 2) 38 + Δ = 55 Δ=17 3) Δ + 17 = 25 Δ=8

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1) 1234 + Δ = 1978 Δ= 744   2) 2468 + Δ = 4764 Δ= 2296
3) Δ + 3677 = 5006 Δ= 3067

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1)17556 + Δ = 28392 Δ= 10836
2) 9083 + Δ = 106903 Δ= 97820
3) Δ + 927 = 81321 Δ= 80394

1) 32.66 + Δ = 826.75 Δ = 794.09
2) 291.83 + Δ = 320.01 Δ = 28.18
3) Δ + 286.57 = 1288.56 Δ = 1001.99

Famous Mathematicians Questions

Because these answers will be written in sentences, your answer might not exactly match my answer and for some questions, there may be more than one answer. Don't worry if your answer doesn't match mine!

1. What did Charles Babbage invent?

Charles Babbage invented machines that could do maths calculations. They were called the Difference Engine 1 and Difference Engine 2. He then invented the Analytical Engine which could do maths calculations and store information.

2. Why did Charles Babbage want to invent this machine?

Charles Babbage wanted to invent the machines because before machines, people used to do the calculations by hand and in their head and they would often make mistakes. Charles Babbage thought that machines would get the calculations right so that we wouldn't have mistakes in our sums.

3. What could his machine The Difference Engine do?

Charles Babbage's machine The Difference Engine could do maths sums.

4. How long ago was Charles Babbage doing this work?

Charles Babbage was doing this work around 200 years ago.

5. How long ago was Ada Lovelace born?

Ada Lovelace was born around 206 years ago.

6. What is Ada Lovelace famous for?

Ada Lovelace is famous for developing Charles Babbage's ideas and becoming the first computer programmer.

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1. Why did Charles Babbage want to invent this machine?
Charles Babbage wanted to invent the machines because before machines, people used to do the calculations by hand and in their head and they would often make mistakes. Charles Babbage thought that machines would get the calculations right so that we wouldn't have mistakes in our sums.

2. What could his machine, The Analytical Engine do?
The Analytical Engine could do maths calculations and also store the information, it had a memory for saving information.

3. Which part of the Analytical Engine was a really new and exciting invention?
The part of the Analytical Engine which was a new and exciting invention was that it had a memory that could store information and remember the results of calculations.

4. How long ago was Charles Babbage working on plans for these machines?
Charles Babbage was doing this work around 200 years ago.

5. How old was Babbage when he died?
Babbage was 78 when he died.

6. How much older was Babbage than Lovelace?
Babbage was 14 years older than Lovelace.

7. The information tells us that Lovelace worked with Babbage for many years. Make an estimate of how long they might have worked together and explain your answer.
You could have lots of different answers for this. If Lovelace worked with Babbage from when she was around 20 years old, and she worked with him until he was around 70 years old, they would have worked together for roughly 26 years. You might have thought that Ada was older when she started working with him or that he stopped working earlier or later so you might have a different answer!

8. How did Lovelace develop the idea of what the machine could do?

Lovelace developed the machine by seeing that the machine could do more than just maths sums. She saw that you could use code to program the machine to show other things like musical notes and letters.

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1. In your own words, give a detailed explanation of what the Analytical Engine could do.

These answers will all differ but might be something like this: The Analytical Engine could work out maths calculations and then also save the information. It had a memory so that information could be saved and used again.

2. What was the big difference between the Difference Engine and the Analytical Engine?

The big difference between the Difference Engine and the Analytical Engine was that the Analytical Engine had a memory and could store the results of calculations.

3. Which part of the Analytical Engine was a new and exciting invention?

The part of the Analytical Engine which was a new and exciting invention was that it had a memory that could store information and remember the results of calculations.

4. It tells us that they used to use Human Computers. What does that mean?

Human Computers means that people used to do the calculations by hand and using their head before we had computers to do big calculations for things like navigation.

5. It then tells us that the maths the human computers were calculating was being used for navigation, science and engineering. Can you think of some examples of the kinds of things the calculations might have been used for?

We will all have different answers for this question and there will be a lot of correct answers but some examples might be:
- For giving directions to ships travelling in the oceans

- For calculating measurements for building bridges
- For calculating measurements for buildings
- For working out distances and sizes in relation to space

6. Which parts of the machines that he was developing are still used today?
The parts that Babbage developed that are still used in computers today are the mill, the store, the reader and the printer.

7. The information tells us that Lovelace worked with Babbage for many years. Make an estimate of how long they might have worked together.
You could have lots of different answers for this. If Lovelace worked with Babbage from when she was around 20 years old, and she worked with him until he was around 70 years old, they would have worked together for roughly 26 years. You might have thought that Ada was older when she started working with him or that he stopped working earlier or later so you might have a different answer!

8. What was important about the notes that Ada Lovelace made?
Ada Lovelace's notes are very important in the early history of computers. She is thought to be one of the first computer programmers because she wrote and published code that she had designed.

9. How did Lovelace develop the idea of what the machine could do?
Lovelace realised that the machine could be programmed to do other things and not just maths calculations. She realised that you could write code which would represent other symbols like music notes and letters.

10. Again, everyone's answers for question 10 will be different but some examples of things we can do now due to the work that people like Babbage and Lovelace did in the past night be:
- Save a huge amount of information on our phones, computers etc
- Use coding
- Do complicated calculations using a computer/calculator

Tuesday

Multiplication and Division

1) 14.6 x 3 = **43.8**   2) 3028 x 10 = **30,280**   3) 98.6 x 25 = **2465**

4) 436 ÷ 3 = **145.5**   5) 2280 ÷ 5 = **456**   6) 3500 ÷ 7 = **500**

7) 205 x 8 = **1640**   8) 41.07 x 2 = **82.14**   9) (14 ÷ 4) x (17 ÷ 2) = **29.75**

Extra

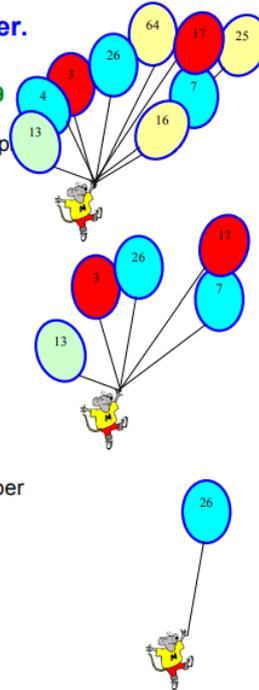**Balloon bursting - answer.**

1. **Balloons with a multiple of 9**

As you know the digits of a multip[le]
of 9 add up to 9 so that takes
away 18, 45, 54, 63 and 99

2. **Square number balloons**

The square numbers are:
4, 16, 25 and 64

2. **Prime number balloons**

A prime number is a whole number
with only two factors.
The prime numbers are:
3, 7, 13, and 17

That leaves just 26.

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1) 73 - Δ = 52 Δ = **21**   2) 80 - Δ = 45 Δ = **35**
3) 90 - Δ = 17 Δ = **73**

1) 1734 - Δ = 35 Δ = **1699**   2) 2006 - Δ = 1504 Δ = **502**
3) 3455 - Δ = 1070 Δ = **2385**

1) 10405 - Δ = 5969 Δ = **4436**   2) 67204 - Δ = 2901 Δ = **64303**
3) 3385 - Δ = 1702 Δ = **1683**

1) 17.8 + Δ = 5.2 Δ = (-12.6)   2) 144.9 + Δ = 97.3 Δ = (-47.6)
3) 30.05 - Δ = 17.06 Δ = 12.99

Famous Mathematicians Questions
Because these answers will be written in sentences, your answer might not exactly match my answer and for some questions, there may be more than one answer. Don't worry if your answer doesn't match mine!

1. How old was Al-Khwarizmi when he died?
Al-Khwarizmi was about 70 years old when he died.

2. How old was Florence Nightingale when she died?
Florence Nightingale was 90 when she died.

1. It tells us that Al-Khwarizmi was part of a team that were fidning the circumference of the Earth. What does the circumference of the Earth mean?
The circumference of the Earth is the distance around the Earth.

2. How old was Florence Nightingale when she was the first woman elected as a member of the Royal Statistical Society?
Florence Nightingale was 39 when she was elected as the first woman in the Royal Statistical Society.

1. Write a paragraph to explain some of the things that Al-Khwarizmi was famous for.

We will all have different ways of writing our answer for this but it should include some of the following:

- He developed rules and systems for doing sums and solving equations
- He invented algebra
- He introduced the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9,
- He worked on developing maps of the world
- He helped in a project to measure the circumference of the Earth

2. How did Florence Nightingale use statistics to improve health care?

Florence Nightingale gathered information about why people were dying in war hospitals and presented the information in ways that were easy to read so that members of parliament would use the information to improve the hygiene and living conditions in war hospitals. She also used statistics to show that bad drainage, dirty water, overcrowding and poor ventilation were causing a lot of deaths in the British Army in India.