Maths Challenge – Week 19

Welcome to week 19 of our weekly maths challenge, with problems and puzzles posed by Gordon Burgin, Andrew Holt and the U3A Maths and Stats Subject Adviser - David Martin.

If you would like to share your ideas on how to solve these puzzles please join our learning forum or discuss within your U3A and interest group. **Check back each week for the solutions** and let us know how you get on by contacting National Office. New maths puzzles will go up onto the website every Thursday.

Week Nineteen

Question 1.

If a farmer uses a large tractor, she can plough a field in 8 hours. Her brother, using a smaller tractor, can plough the same field in 12 hours. How many hours would it take to plough the field if they worked together?

Question 2.

The areas of the faces of a cuboid are 28 cm^2, 42cm^2, 96 cm^2. What is the volume of the cuboid?

Question 3.

How many distinct factors (including 1 and 2020) are there of 2020?

Question 4.

The points X and Y are placed on the sides BC and CD of the square ABCD as shown. The lengths of XY, AX, and AY are 3, 4, 5 respectively. What is the side length of the square ABCD?