Mathematics Problems for week forty-seven www.u3a.org.uk posed by Gordon Burgin, Andrew Holt, Rod Marshall, Ian Stewart and David Martin

Week Forty-seven

Question 1.

Mr Kohl has a beaker of solution to distribute to the students in his chemistry class. If he gives each student 3 millilitres (ml) of solution, he will have 5 ml left over. In order to give each student 4 ml of solution, he will need an additional 21 ml. How many students are in the class?

Question 2.

The sum of three numbers is 855. One of the numbers is 50% more than the sum of the other two numbers. What is the value of this largest number?

Question 3.

Find four whole numbers so that any number from 1 to 40 can be formed by adding and subtracting a selection of them.
For example, with 1, 2, 5 and 10 we can form 14 = 10 + 5 – 1,
However, the highest number possible with these four numbers is 10 + 5 + 2 + 1 = 18

Question 4.

Adam, Mary and Tom each have a bag of apples. Mary has 50% more than Adam and Tom has 50% more than Mary. Tom gives 6 apples to Adam. The three all eat one of their apples. Each of the three now has a two-digit prime number of apples. How many apples did Adam have at the start?