



**Age 14+ Level ★
Worksheet 1**

1. Adjacent Additions

In a 7-digit numerical code, each group of four adjacent digits adds to 16 and each group of five adjacent digits adds to 19.

What is the sum of all seven digits?

2. In the Hundreds

For how many positive values of n are both $\frac{1}{2}n$ and $2n$ three-digit whole numbers?

3. Weighing the Baby

When a mother was weighed holding her baby, the scales read 78kg. When the nurse was weighed holding the baby, the scales read 69kg. When the nurse and the mother stood on the scales together, the scales read 137kg.

What was the weight of the baby?

4. I Love Musical Stars

What is the value of ♥ if each row and column has the given totals?

♥	★	♪	Total
♪	♥	♥	12
★	★	♪	11
Total	12	11	13

5. Bat and Ball

A ball and a bat cost £90 in total.
Three balls and two bats cost £210 in total.

How much does a bat cost?

6. Pure Algebra

The sum of two numbers a and b is 7 and the difference between them is 2.
What is the product ab ?

These problems are adapted from UKMT (ukmt.org.uk) and WMC (competition.ac) problems.