

**Stage 3 ★★****Mixed Selection 1****1. Mean Square**

Can you fill this 3 by 3 grid with the numbers 1 to 9 so that the number in the middle of each line (horizontal, vertical or diagonal) is the mean of the two numbers on either side of it?

**2. A Mean Calculation**

Can you work out the mean of this set of numbers without using a calculator?

97 97 98 99 99 99 100 100 101 101 103 104 104 105

**3. Mean Median**

The mean weight of five children is 45 kg. The mean weight of the lightest three children is 42 kg and the mean weight of the heaviest three children is 49 kg.

What is the median weight of the children in kg?

**4. Acceptance Rate**

The mean number of students accepted by a school in the four years 2007 to 2010 was 325.

The mean number of students accepted by the school in the five years 2007 to 2011 was 4% higher.

How many students did this school accept in 2011?

**5. Equal Means**

What value of  $x$  makes the mean of the first three numbers in this list equal to the mean of the last four?

15 5  $x$  7 9 17

*These problems are adapted from UKMT ([ukmt.org.uk](http://ukmt.org.uk)) and SEAMC ([seamc.asia](http://seamc.asia)) problems.*