

Understanding decimal answers (impossible answers)

The **mean value** is sometimes an '**impossible**' number.

Example 1

A football team has a mean score of **2.4** goals in a month.
But you can't have **0.4** of a goal.

Example 2

The mean family size in a town is **4.5**
But you can't have **0.5** of a person.



These real-life mean-value averages often don't make sense because the answer is not a whole number.

Example 3

There are four classes of numeracy students in a college. The number of students in each class is 11, 13, 14 and 16. What is the mean number of students in a class?

To work out the mean number of students in a class find the total number of students and divide by the number of classes.

The total number of students is: $11 + 13 + 14 + 16 = 54$

There are 4 classes, so divide the total by 4: $54 \div 4 = 13.5$

The mean number of students in a class is: **13.5**

You can't have **0.5** of a student, but this is still the mean value. You could call it an **impossible number** in this case.

But you can still use this number to make calculations. For example, if you know that the mean class size is 13.5 students then you could estimate that in 10 classes there would be $10 \times 13.5 = 135$ students.