Combining Means

(a) In a class of 30 students, 12 are boys and 18 are girls. In a science test the mean score for girls was 72 and the mean score for boys was 65. Find the mean score for the whole class to 1 d.p.

	Number	Mean	Total
Girls	18	72	1296
Boys	12	65	780
Overall	30	69.2	2076

(b) A farmer has 40 cows and 60 sheep. The mean weight of the cows is 950 kg and the mean weight of the sheep is 140 kg. Find the mean weight of all the animals the farmer has.

$$\frac{(40 \times 950) + (60 \times 140)}{100} = 464 \text{ kg}$$

(c) A team of 14 athletes has a mean 100 m sprint time of 14.8 seconds. Another member joins the team with a 100 m time of 12.9 seconds. Find the new mean time of all 15 athletes to 1 decimal place.

$$\frac{(14 \times 14.8) + 12.9}{15} = 14.7 \text{ seconds}$$

(d) Form 7A has 24 students and their mean age is 11.7 years. When the age of their form tutor is added, the mean goes up to 13.1 years. Find the age of the form tutor.

$$(13.1 \times 25) - (24 \times 11.7) = 46.7 \text{ years}$$

(e) Aleena records the number of people using a library per day over January and February. Across January a total of 1680 people visited the library and across both months the mean was 62.8 people. Given that it was a leap year, find the mean number of people who visited the library per day in February.

$$\frac{(62.8 \times 60) - 1680}{60 \ 29} = 72 \text{ people}$$

(f) The mean height of a sports team of 15 defenders or attackers is 183 cm. The mean height of the defenders is 187 cm and for the attackers it is 181 cm. How many attackers and defenders are there in the team?

$x =$ defenders

$15 \times 183 = 187x + 181(15 - x)$

$x = 5$

5 defenders, 10 attackers