Age 11+ Level ★
Worksheet 1 – Solutions

1. **Kate's Date**
   The mass of the date that Kate ate was 90g
   nrich.maths.org/2499/solution

2. **Choose the Mean**
   The numbers are 3, 7, 9, 9
   nrich.maths.org/12931/solution

3. **Rugby and Ballet**
   The average mass of all fifteen people is 55kg
   nrich.maths.org/6266/solution

4. **Range of Averages**
   The numbers are 12, 12, 16, 22
   nrich.maths.org/13710/solution

5. **Ice cream Pie**
   90 chocolate ice creams were sold
   nrich.maths.org/2438/solution

6. **Balancing the Books**
   300 000 visitors are required this week
   nrich.maths.org/2505/solution

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

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Worksheet 1 – Solutions

1.   Mean Square

1	2	3
4	5	6
7	8	9

Other solutions can be obtained
by rotating and reflecting this one

nrich.maths.org/12850/solution

2.   Rendezvous
They should meet in Libourne
(total distance travelled would be 211km)
nrich.maths.org/6242/solution

3.   The Mean Problem
Alongside 2, the other three numbers are 6, 19, 33
nrich.maths.org/4956/solution

4.   Shifting Average
The average of the four new numbers is 40
nrich.maths.org/13574/solution

5.   The Average Age
The other teachers are 23, 23, 28 and 60 years old
nrich.maths.org/13751/solution

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Age 11+ Level ★★
Worksheet 2 – Solutions

1. **Alpha United**
   The mode is 3 goals, and the median is 2 goals per match
   nrich.maths.org/14085/solution

2. **Average Temperature**
   The new average temperature is 4.5° Celsius
   nrich.maths.org/13434/solution

3. **French Test**
   The average for all ten students is 5.2
   nrich.maths.org/13696/solution

4. **Sevens**
   The largest possible number is 28
   (the seven numbers would be 1, 2, 3, 4, 5, 6, 28)
   nrich.maths.org/11610/solution

5. **Bat Wings**
   Student A's missing measurement is 12cm
   Student B's missing measurement is 14cm
   nrich.maths.org/505/solution

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Age 11+ Level ★★★
Worksheet 1 – Solutions

1. **Committees**
   There are 6 members in the club
   nrich.maths.org/12926/solution

2. **Number of Arms**
   It is almost certain that the next person you meet will have more than the mean number of arms (just below 2), but impossible that they will have more than the median or modal number of arms
   nrich.maths.org/13698/solution

3. **Any Means Possible**
   It is possible, by cutting the 70cm rod into a 30cm rod and a 40cm rod
   nrich.maths.org/14101/solution

4. **Grandpa's Rock Cakes**
   The cake weighed 5130g
   nrich.maths.org/2524/solution

5. **Growing Families**
   The mean number of children per family is 2.42
   The mean number of siblings per child is 1.85
   nrich.maths.org/14015/solution

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