



Calculating ranges and averages: problems - answers

Calculate the average and the range in each of these problems:

1. Four students work part-time in a local supermarket. Their weekly wages are £38, £45, £62 and £75. What is the average weekly wage? What is the range of weekly wages?

The total amount of these figures is $38 + 45 + 62 + 75 = 220$

There are 4 wages, the average is $220 \div 4 = 55$

The range of weekly wages is $75 - 38 = 37$

The average weekly wage is £55.

The range of weekly wages is £37.

2. The daytime temperatures recorded over 5 consecutive days in September were 14.6°C , 15.2°C , 15.8°C , 16.1°C , and 16.3°C . What was the average temperature over the 5 days? What was the range of temperature over the 5 days?

The total amount of these figures is $14.6 + 15.2 + 15.8 + 16.1 + 16.3 = 78$

There are 5 temperatures, so the average is $78 \div 5 = 15.6$

The range of temperatures is $16.3 - 14.6 = 1.7$

The average temperature over the 5 days was 15.6°C .

The range of temperature was 1.7°C (a small change in the temperature).

3. There are 4 GCSE maths classes in a college. The number of students in each class is 21, 22, 25, and 28. What is the average size of a GCSE maths class? What is the range of students across classes?

The total amount of these figures is $21 + 22 + 25 + 28 = 96$

There are 4 classes, so the average is $96 \div 4 = 24$

The range of numbers in a class is $28 - 21 = 7$

The average size of a GCSE maths class is 24 students.

There is a range of 7 students across classes.

4. Four people in a group weigh 64 kg, 70 kg, 180 kg and 70 kg. What is the average weight of this group of people? What is the range of weights?

The total amount of these figures is $64 + 70 + 180 + 70 = 384$

There are 4 weights, so the average is $384 \div 4 = 96$

The range is $180 - 64 = 116$

The average weight of the group of people is 96 kg.

There is a wide range of weights of 116 kg.



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(This is a **distorted average** as the one heavy person makes the average high. It also has a wide range of weights. See the 'Understanding distorted averages' factsheet for an explanation.)

5. A student is taking 5 subjects. Her results in the end of term tests were 56%, 76%, 58%, 67% and 83%. What is the average percentage mark overall? What is the range of marks?

The total amount of these figures is $56 + 76 + 58 + 67 + 83 = 340$

There are 5 test results, so the average is $340 \div 5 = 68$

The range is $83 - 56 = 27$

The average percentage mark is 68%.

There is a range of 27 marks.