**Statistics 2020 – finding the mean**

Some of you will already know how to find the mean of a set of data.

The mean is one way of finding an average. (You can also find the median or the range, but that is something for secondary school)

To find the mean you add up all the numbers then divide your answer by how ever many numbers you had in the first place.

Example: the mean of 4 5 6 7 and 8 is 4+5+6+7+8 which is 30, then divide 30 by 5 (how many numbers you had in the first place) and the answer is 6. Therefore, the mean is 6

Your turn

**Fluency**

1) Calculate the mean of these sets of numbers:

a) 3, 6, 8, 2, 4, 13 (6)

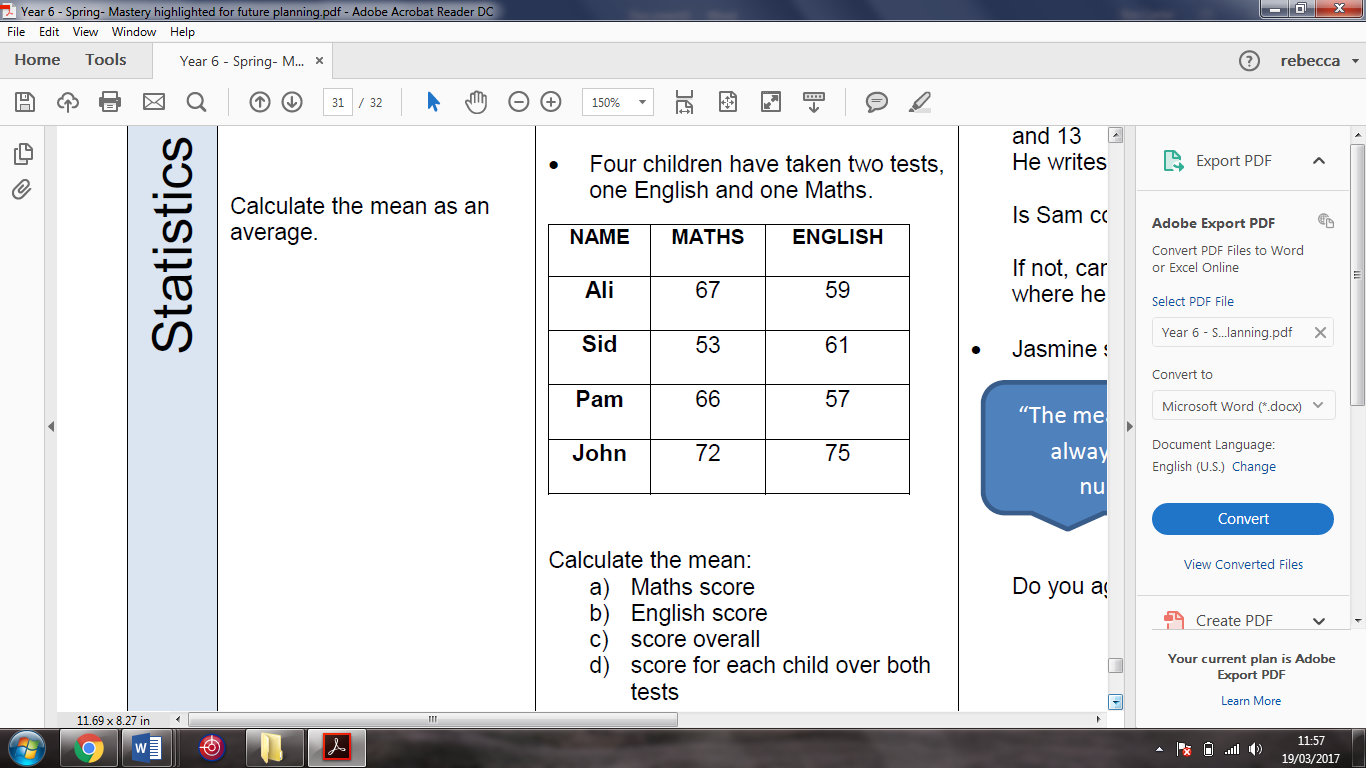
b) 7, 13, 16, 9, 10 (11)

2) Hassan is his school’s cricket team’s top batsman. His scores over the year are:

134, 60, 17, 63, 38, 84, 10

Calculate the mean number of runs Hassan scored. (58)

3) Four children have taken two tests, one English and one Maths.



Calculate the mean:

a) Maths score (64.5)

b) English score (63)

c) score overall (63.75)

d) score for each child over both tests

Ali 63

Sid 57

Pam 61.5

John 73.5

4) Seven children measured their heights.

|  |  |
| --- | --- |
| **Children** | **Height (cm)** |
| Stefan | 144 |
| Lara | 136 |
| Olivia | 142 |
| Chen | 143 |
| Maria | 152 |
| Dev | 148 |
| Sarah | 150 |

What is the mean height of the children? 145

**Reasoning**

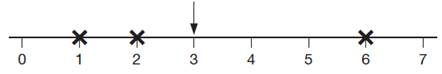
1. Three apples have a **mean** (average) mass of 100 grams.

The largest apple is removed.

The **mean** mass of the remaining two apples is 70 grams.

What is the mass of the largest apple? If the mean of 2 is 70 then the total mass of those 2 must be 140. If the mean of 3 is 100 then the total mass must be 300. Therefore, is the mass of 2 is 140 then the mass of the largest apple must be 160g

2) The arrow below points to the **mean** of the three numbers shown by crosses.



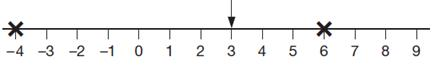
(a)     Draw an arrow that points to the mean of the three numbers shown below.



(b)     The arrow below points to the mean of three numbers.

One of the numbers is missing.

Draw a cross to show the position of the missing number.



1. Six children have taken a mental maths test. The mean score was 15 out of 20

Find the missing score in the list of scores below

1. 16 17 13 12 15
2. Jasmine says that the mean average is always a whole number. Do you agree? Explain your reasoning. You should say that you do not agree because sometimes when dividing the quotient is not a whole number. The number of data may not divide into the total exactly

**Problem Solving**

1. Make up a set of five numbers which have a mean of 3.6 Can you find more than one combination of five numbers? The best way to do this is multiply 3.6 by 5 which equals 18. Now find 5 numbers which when added together equal 18. There will be more than one combination
2. Megan goes on a walking holiday for five days.

The table shows how far she walked on the first four days.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Monday | Tuesday | Wednesday | Thursday |
|  | 14 km | 23 km | 13 km | 13 km |

Megan says,

***‘My average for the first four days is more than 15 km.’***

Explain why Megan is **correct**. Because she has added the 4 together and got 63. 63 divided by 4 is more than 15

Friday is her last day. She wants to increase her average to **17 km**. How many kilometres must she walk on Friday? You need to make the total 85 (because 85 divided by 5 is 17) so on the last day she walked 22km because 63+22 = 85