

# Mrs Mountney 's Helpful Hints

## *-Mean Problem Solving*

### **Exam Style Question:**

A B C D all represent 4 integers. Their range is 2, the mode is 5, the median is 5 and the mean is 5. What could the four numbers be?

#### **Clues:**

- Range—Highest value subtract lowest value
- Mode—Most common value
- Median—The middle value
- Mean—Sum up and divided by the total number of values

#### **Steps to success**

- Use the mean to find the total sum
- Then go through and calculate the median, mode and range

#### **Answer:**

- Four cards A B C D
- As the mean is 5, all cards must sum to 20 because  $5 \times 4 = 20$ .
- As the median is 5 then, either B and C are both 5 or  $(B+C)/2 = 5$
- As the mode is 5 then there has to be at least two 5's so the options are:

#### **Option 1:**

- A B C D would be 5 5 C D, but C would also have to be 5 as the median has to be 5. Thus this would result in 5 5 5 D

#### **Option 2:**

- A B C D becomes A 5 5 D which satisfies median

#### **Option 3:**

- A B C D would be come A B 5 5 but B would have to be 5 also to satisfy the median. Thus becoming A 5 5 5.

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Continued....

- The range informs that the highest subtract the lowest would give 2.
- 2. Looking at all the different options
  - Option 1: D would have to be 7 but this does not satisfy the mean, (as it gives 22).
  - Option 2: A could be 4 and D could be 6, this would satisfy the mean (gives 20).
  - Option 3 A would have to be 3, but this would not satisfy as this would give 18.

Therefore the solution is 4 5 5 6.