

## ANSWERS Averages and Range – W/C 11<sup>th</sup> May 2020

**Task 2:** In your book write out the solutions for the following questions:

### SECTION A

Find the **mean, median, mode and range**:

a) 2,4,6,10,2,2,2      Mean = 4, Median= 2, Mode = 2 and Range =8

*For your all your answers you must show the sorted data and the calculation for the mean (e.g Mean =  $\frac{28}{7} = 4$ ) and for the range e.g. Range =  $10 - 2 = 8$*

b) 1,4,5,1,4      Mean = 3, Median= 4, Mode = 4 and Range =4

c) 1,7,10      Mean = 6, Median= 7 Mode = NO MODE and Range =9

d) 2,7,1,8,2,9,1,2      Mean = 4, Median= 2, Mode = 2 and Range =8

e) 1,1,1,2,1,2,1,1,2,8      Mean = 2 , Median= 1 , Mode = 1 and Range =7

f) 7,9,1,3,5      Mean = 5, Median= 5, Mode = NO MODE and Range =8

**SECTION B** Work out the **mean** for these tables: Remember to add the extra columns when you write them out

Mark	Frequency
4	3
5	1
6	2
7	8
8	6
9	5
10	5

Mean = 7.5

Mark	Frequency
0	6
1	17
2	52
3	22
4	3
Total	100

Mean = 1.99 (If you got this wrong – check if you put 6 x 0 as 6?!!)

Number of drawing pins	Frequency	
29	2	
30	5	
31	2	
32	1	

Mean = 30.2

**SECTION C:** Work out the **mode/range/median** for these tables: (For these you do not need to add an extra column but you do need to add up the frequency to find the middle value – writing them out may be a bit boring! – see the third example above)

Mark	Frequency
4	3
5	1
6	2
7	8
8	6
9	5
10	5

**Mode = 7, Range = 6, Median = 8**

Mark	Frequency
0	6
1	17
2	52
3	22
4	3
Total	100

**Mode = 2, Range = 4, Median = 2**

Number of drawing pins	Frequency	
29	2	
30	5	
31	2	
32	1	

**Mode = 30, Range = 3, Median = 30**

**SECTION D:** Work out the **ESTIMATED MEAN** for these grouped tables:

Height ( $h$ cm) of plants	Frequency		
$0 < h \leq 10$	2		
$10 < h \leq 20$	8		
$20 < h \leq 30$	9		
$30 < h \leq 40$	7		
$40 < h \leq 50$	4		

$$\text{Mean} = \frac{780}{30} = 26$$

Recovery time ( $m$ minutes)	Number of people
$0 < m \leq 4$	2
$4 < m \leq 8$	7
$8 < m \leq 12$	29
$12 < m \leq 16$	26
$16 < m \leq 20$	16
$20 < m \leq 24$	10

$$\text{Mean} = \frac{1208}{90} = 13.4$$

Weight ( $w$ grams) of plants	Frequency		
$0 < w \leq 30$	0		
$30 < w \leq 50$	14		
$50 < w \leq 60$	16		
$60 < w \leq 70$	21		
$70 < w \leq 100$	9		

$$\text{Mean} = \frac{3570}{60} = 59.5$$

## SECTION D: Mixed Exam Questions

The table shows information about the ages of 24 students.

Age (years)	Number of students
16	9
17	3
18	8
19	4

(a) Write down the mode of these ages.

**16**

[1 mark]

(b) Calculate the mean of these ages.

$$\text{Mean} = \frac{414}{24} = 17.25$$

(b) Find the median of these ages.

**17.5**

[2 marks]

[3 marks]

The table shows the heights of 30 students in a class.

Height, $h$ , (cm)	Number of students
$140 < h \leq 144$	4
$144 < h \leq 148$	5
$148 < h \leq 152$	8
$152 < h \leq 156$	7
$156 < h \leq 160$	5
$160 < h \leq 164$	1

$$\text{Est Mean} = \frac{4528}{30} = 150.9$$

By using the midpoints of each group, calculate an estimate of the mean height.

[3 marks]

A road has 30 houses.

The number of letters delivered to each house on one day is given in the frequency table.

Number of letters	Frequency
0	4
1	6
2	4
3	3
4	7
5	6

(a) Calculate the mean number of letters delivered to each house.

$$\text{Mean} = \frac{81}{30} = 2.7$$

[3 marks]

(b) A house is chosen at random. What is the probability that it has more than 3 letters delivered to it?

$$\frac{13}{30}$$

[2 marks]

**Task 3:** The FINAL TASK is to complete the Assignment on mathswatch, which is due by 18<sup>th</sup> May

There are a couple of questions that are a little more challenging – consider what you know and do your best to answer them all!