Measures of Central Tendency - Mean, Median, Mode and Range

Measures of Central Tendency
Mean - The average of a set of numbers.
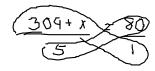
Median - The middle number.

Mode - The number that occurs the most often.

Range - The highest number minus the lowest number.

1. Dominic has test scores of 78, 85, 68 and 93. What is his average test score?

$$
\begin{array}{r}
^2 78 \\
+\ 85 \\
68 \\
93 \\
\hline
32\,4
\end{array}
$$

$$
\begin{array}{r}
81 \\
4\ \overline{)324} \\
-321\downarrow \\
\hline
04 \\
-4 \\
\hline
0
\end{array}
$$

$\boxed{81\%}$

2. Ashley's test scores for the first marking period are 86, 71, 65 and 87. What must she score on the fifth test to raise her average score to an 80?

$$
\begin{array}{r}
^1 \\
86 \\
+71 \\
65 \\
87 \\
\hline
309
\end{array}
$$

1st 4 scores = 309
5th = x

$\dfrac{309+x}{5} \;\times\; \dfrac{80}{1}$

$1(309+x) = 400$
$309 + x = 400$
$-309 \qquad -309$

$\boxed{x = 91\%}$

3. Find the median and range for each set of numbers:

a) 17, 56, 21, 4, 16, 8, 19

4, 9, 16, 17, 19, 21, 56

Median = $\boxed{17}$

b) 31, 22, 15, 8, 18, 21

9, 15, 18, 21, 22, 31

Median =

18

$$
\begin{array}{r}
19.5 \\
2\ \overline{)39.0}
\end{array}
$$

$\boxed{19.5}$

Median = $\boxed{17}$

Median =

$$18 + 21 = 39$$

$$2\overline{)39.0} = 19.5 \quad \boxed{19.5}$$
$$-2\downarrow$$
$$19 \downarrow$$
$$-18$$
$$10$$
$$-10$$
$$0$$

Range = $56 - 4 = \boxed{52}$

Range =

$31 - 9 = \boxed{22}$

4. Find the mode of each set of numbers:

a) 1, 3, 5, 8, 9, 1

$\boxed{1}$

b) 1, 3, 5, 8, 3, 1

$\boxed{1, 3}$

c) 1, 3, 5, 5, 1, 3

$\boxed{\text{No mode}}$

d) 1, 3, 5, 5, 3, 1, 3

$\boxed{3}$

5. The table below shows the frequency of the high and low temperatures in September.

Temperature Range	Frequency
60° - 69°	2
70° - 79°	4
80° - 89°	15
90° - 99°	7
100° - 109°	2

$\}6 \}21$

30

a) What is the largest possible range of temperatures?

$109 - 60 = \boxed{49°}$

b) In which interval is the median temperature?

$\dfrac{30}{2} = 15$ median: $15^{th} + 16^{th}$

$\boxed{80° - 89°}$