Interpreting Spread

Consider the following dataset, representing the annual income of ten people.

All numbers represent *thousands of dollars* (so `14` means "$14,000"):

```
60, 10, 21, 180, 14, 20, 45, 35, 45, 170
```

1) In the space below, rewrite this dataset in **sorted order**.

10, 14, 20, 21, 35, 45, 45, 60, 170, 180

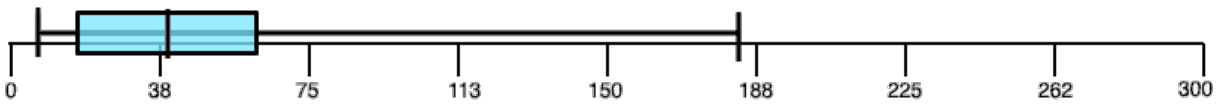
2) In the table below, compute the **measures of center** for this dataset.

Mean (Average)	Median	Mode(s)
60	40	45

3) In the table below, compute the **five number summary** of this dataset.

Minimum	Q1	Q2 (Median)	Q3	Maximum
10	20	40	60	180

4) On the number line below, draw a **box plot** for this dataset.



5) The following statements are *correct* ... but misleading. Write down the reason why.

Statement	Why it's misleading
"They're rich! The average person makes $60k dollars!"	The mean is easily manipulated by a few outliers. For a dataset with this skew, median would have been a better measure.
"It's a middle-income list: the most common salary is $45k/yr!"	This is true, but mode should rarely be used for quantitative data with as much variability as this. The fact that $45k appears *twice* doesn't tell us enough information about the shape for this claim to be valid.
"This group is really diverse, with people making as little as 10k and as much as $280k!"	Two data points - especially the extremes! - should not be used to make a claim about shape.