

ANSWERS \rightarrow MEASURES OF CENTRAL TENDENCY.

1a)

WATCH
ORDER!

$$\begin{aligned}\text{Mean} &= \frac{10+12+12+18+93+98+99+100+110}{9} \\ &= 61.3 \quad (\text{Best Representation})\end{aligned}$$

$$\begin{aligned}\text{Median} &= 93 \\ \text{Mode} &= 12\end{aligned}$$

$$\begin{aligned}\text{b) Mean} &= \frac{2+24+26+48+61+68+72}{7} \\ &= 43 \quad (\text{Best Representation.})\end{aligned}$$

$$\begin{aligned}\text{Median} &= 48 \\ \text{Mode} &\rightarrow \text{No mode}\end{aligned}$$

$$\begin{aligned} \text{c) Mean} &= \frac{20.0 + 20.0 + 20.0 + 20.5 + 21.5 + 26.0 + 31.5}{7} \\ &= 22.8 \end{aligned}$$

$$\begin{aligned} \text{Median} &= 20.5 \text{ (Best Representation)} \\ \text{Mode} &= 20.0 \end{aligned}$$

$$\begin{aligned} \text{d) Mean} &= \frac{4 + 6 + 8 + 12 + 12 + 14 + 16 + 18}{8} \\ &= 11.25 \text{ (Best Representation)}. \end{aligned}$$

$$\text{Median} = \frac{12 + 12}{2} = 12$$

$$\text{Mode} = 12$$

- 2a) Mean
- b) mode
- c) mode
- d) median

- 3a) Mean
- b) Mean
- c) Mean

$$4.a) \text{ Mean} = \frac{2+3+8+9+10+11+12+13+14+15+15+16}{12}$$
$$= 10.7$$

$$\text{Median} = \frac{11+12}{2} = 11.5$$

$$\text{Mode} = 15$$

b) The mean best represents this data.

$$5. \text{ Mean} = \frac{3+6+8+9+10+10+12+12+12}{9} \\ = 9.1$$

$$\text{Median} = 10$$

$$\text{Mode} = 12$$

b) The mean best represents this data.

$$6. \text{ Mean} = \frac{36+36+39+40+41+43+45+47+52+58}{10} \\ = 43.7$$

$$\text{Median} = \frac{41+43}{2} \\ = 42$$

$$\text{Mode} = 36$$

b) The mean best represents this data.

c) If, on the last day, the number of boats was 94 instead of 47, the mean would change.

The median would then best represent this data.

7.

$$\text{a) Mean} = \frac{34.8 + 39.8 + 39.8 + 40.2 + 40.2 + 44.7 + 46.1 + 50.0}{8} \\ = 41.95$$

$$\text{Median} = \frac{40.2 + 40.2}{2} \\ = 40.2$$

$$\text{Mode} = 39.8, 40.2$$

The mean would best represent this set of data.

b) If two larger crates were added with masses of 86.2 kg and 90.5 kg, the mean and the median would change.

The median would then best represent this data.

8. a)

$$\begin{aligned} \text{Mean} \\ &= \frac{158.95 + 176.30 + 178.72 + 187.50 + 193.60 + 201.45 + 203.50 + 205.15 + 208.00 + 210.25}{10} \\ &= \$192.30 \end{aligned}$$

$$\begin{aligned} \text{Median} \\ &= \frac{193.60 + 201.45}{2} \\ &= \$197.50 \end{aligned}$$

Mode \rightarrow NO MODE

b) If the next day's receipts were \$42.50, the mean and the median would change.

The median would now best represent this data.

c) The receipts may have fallen due to weather, a holiday, a power outage, change of business hours, etc.