



## 100m Rowing

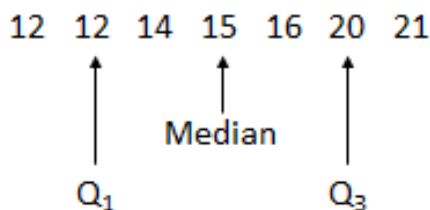


Brothers Richard and Peter Chambers recorded their last 7 times for 100m rowing. Here are the results in seconds:

Richard	16	15	21	12	20	14	12
Peter	14	10	21	14	13	24	11

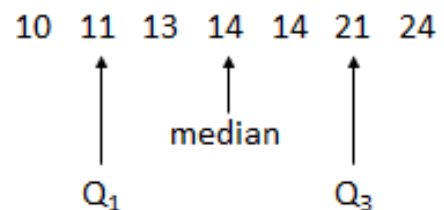
Use the median and semi-interquartile range to compare their times.

### Richard



$$\begin{aligned}SIR &= \frac{Q_3 - Q_1}{2} \\&= \frac{20 - 12}{2} = 4\end{aligned}$$

### Peter



$$\begin{aligned}SIR &= \frac{Q_3 - Q_1}{2} \\&= \frac{21 - 11}{2} = 5\end{aligned}$$

On **average** Peter's times are faster as  $14 < 15$  but Richard's times are more **consistent** as  $4 < 5$ .

Try to keep your comment as brief and specific as possible using the key words of **average** and **consistent**.



## 800m Freestyle



Rebecca Adlington has been training to try to reduce her pulse rate after a race in order to enhance performance in competitions.

Here are her pulse rates for the 9 swims before and after the training.

Before	178	200	196	185	165	175	163	195	188
After	183	152	148	168	132	189	155	146	192

Compare her performance before and after using the mean and standard deviation.

**Before**

**After**

$$\sum x = 1645 \quad \bar{x} = 182.\dot{7}$$

$$\sum x = 1465 \quad \bar{x} = 162.\dot{7}$$

$$\sum x^2 = 302113$$

$$\sum x^2 = 242071$$

$$sd = \sqrt{\frac{302113 - 1645^2/9}{8}}$$

$$= 13.4$$

$$sd = \sqrt{\frac{242071 - 1465^2/9}{8}}$$

$$= 21.2$$

On **average** Rebecca's pulse rate has improved after training as  $162.\dot{7} < 182.\dot{7}$  but her pulse rates were more **consistent** before as  $13.4 < 21.2$

Try to keep your comment as brief and specific as possible using the key words of **average** and **consistent**.