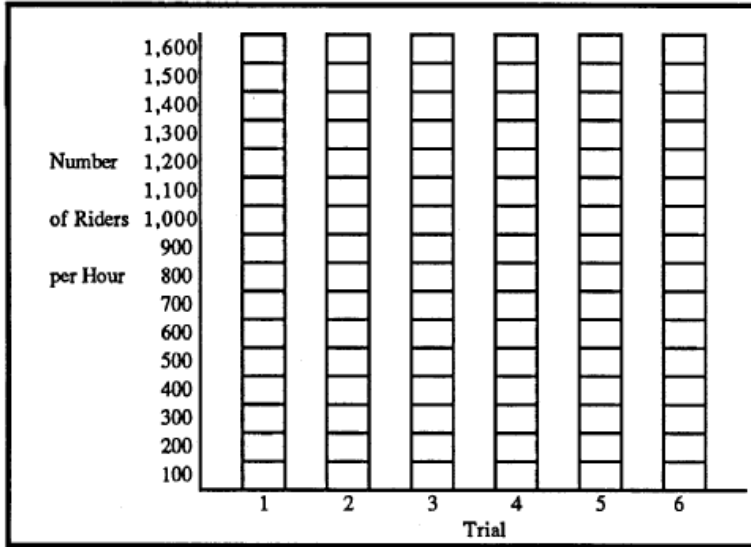


MEASUREMENT AND STATISTICS

- Estimate the number of people per hour that ride the Sky Tram. Count the number of riders passing a certain point in one minute, and then multiply by 60. Enter your result as Trial 1 on the histogram below. Repeat your measurement. Find two friends and “borrow” their results. Finish the histograms and calculate the average number of riders per hour and the standard deviation. The standard deviation tells you how well all the



$$\text{Average } (N_{\text{avg}} = \frac{N_1 + N_2 + N_3 + N_4 + N_5 + N_6}{6}): \underline{\hspace{2cm}}$$

$$\text{Standard deviation} = \sqrt{\frac{1}{6} \sum_{i=1}^6 (N_i - N_{\text{avg}})^2}: \underline{\hspace{2cm}}$$

measurements agree with each other.

- Now measure the number of riders passing your special point for 3 minutes. Which gives the most precise result: a) the 3-minute measurement; b) Trial 1; or c) the average value from Part 1? Why?
- Imagine you measure the length of the Sky Tram using three devices: 1) a meter stick; 2) pacing the distance; and 3) a car odometer. Which will give you the most precise value? Why?