§ D #6. $\frac{x_1 + x_2 + \cdots + x_{11}}{11} = 80.3$

$$x_1 + x_2 + \cdots x_{11} = 883.3$$

$$\frac{x_1 + x_2 + \cdots x_{11} + x_{12}}{12} = 81.2$$

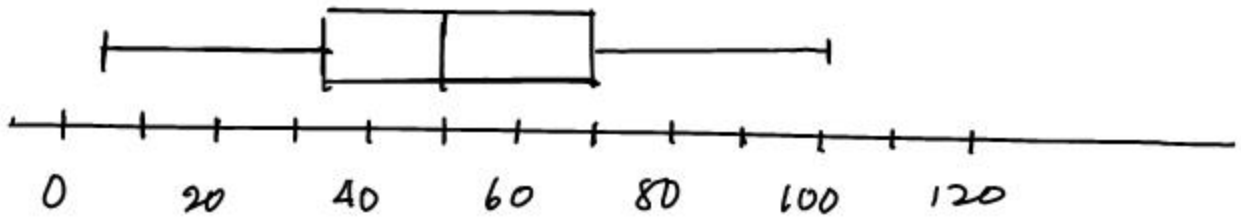
$$\underbrace{x_1 + x_2 + \cdots + x_{11}}_{883.3} + x_{12} = 974.4$$

$$-883.3$$

$$x_{12} = 91.1 \text{ kg}$$

Box and Whiskers Plots

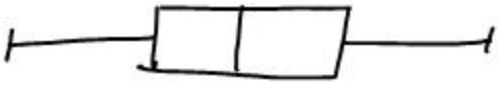
Ex. 5-number summary: 5, 35, 50, 70, 100



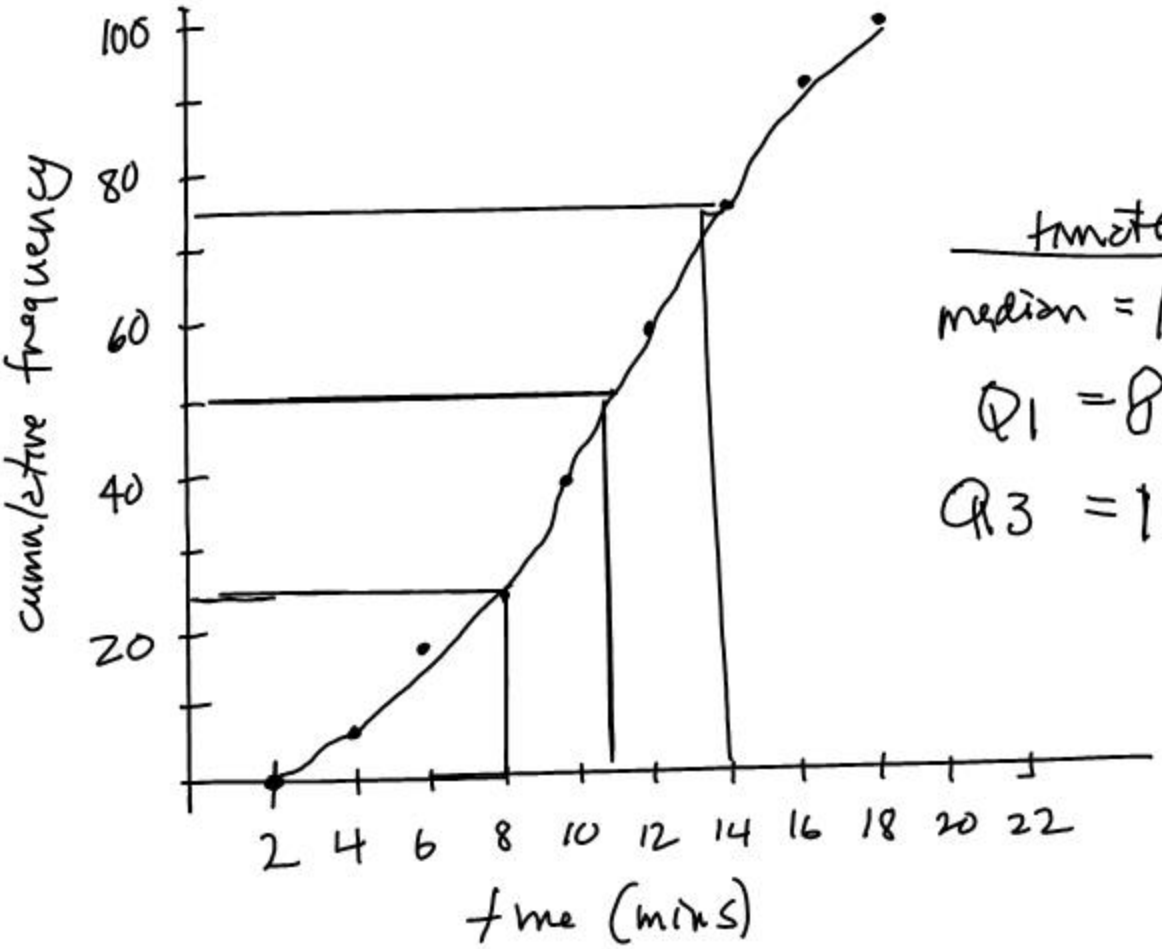
Outlier – a data value smaller than

$Q_1 - 1.5(IQR)$ or larger than

$Q_3 + 1.5(IQR)$ *



Cumulative Frequency



time

median = 11

$Q_1 = 8.1$

$Q_3 = 13.5$

Mean, variance, standard deviation

data set: 2, 3, 4, 5, 6

$\bar{x} = 4$

$\sigma = 1.414$

$\sigma^2 = 2$

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data set: 8, 12, 16, 20, 24

(4 times the previous set)

$\bar{x} = 4(4) = 16$

$\sigma = 4(1.414) = 5.656$

$\sigma^2 = 4^2(2) = 32$

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data set: 7, 8, 9, 10, 11

(5 more than the 1st set)

$\bar{x} = 5 + 4 = 9$

$\sigma = 1.414$ (no change)

$\sigma^2 = 2$ (no change)

One more look at variance

$$\text{Var}(X) = E(X^2) - [E(X)]^2$$

Ex. (NO calculator)
Find the variance of $\boxed{5, 6, 10, 11}$

$$E(X) = \frac{5+6+10+11}{4} = 8$$

$$E(X^2) = \frac{25+36+100+121}{4} = 70.5$$

$$\begin{array}{r} {\scriptstyle 1} \\ 121 \\ 100 \\ 36 \\ +\ 25 \\ \hline 282 \end{array}$$

$$\text{Var}(X) = 70.5 - 8^2 = 6.5$$

$$\underline{-64.0}$$

Thurs - 11/2 Review Exercises

Tues - 11/7 Review

Thurs - 11/9 TEST

START CALCULUS