

# Chapter 3 cont.

Which (if any) of these numbers are outliers?

{29, 47, 49, 50, 51, 55, 65, 77}

Format definition of an outlier: A number is an outlier if it is less than  $Q_1 - 1.5IQR$  or greater than  $Q_3 + 1.5IQR$

$Q_2$  in this case is between 50 and 50 (result is 50.5, but that's irrelevant)

$$Q_1 = \frac{47+49}{2} = 48$$

$$Q_3 = \frac{55+65}{2} = 60$$

$$IQR = 60 - 48 = 12 \text{ (reminder: IQR = interquartile range)}$$

**Inner fences** (number you have to be past in order to be considered an outlier):

$$Q_1 - 1.5IQR = 48 - (1.5)(12) = 48 - 18 = 30$$

$$Q_3 + 1.5IQR = 60 + (1.5)(12) = 60 + 18 = 78$$

By the above calculations, 29 would be the only outlier since it is less than 30.

## Homework

Already assigned 3.81 a,b

Do the box plot

IQR

Inner fences

(Other stuff the problem asks for as well)

Refer to the handout for the answers

## Chapter 4 - Probability

Experiments:

Flipping a coin (once, twice, three times, etc.)

Rolling a die (once, twice, ...)

Drawing a card from a deck

Roulette

Randomly selecting a person and seeing if the person is left or right handed (L or R)

The sample space ( $SS$ ) is the set of all the possible results (outcomes) for the experiment

## Flipping a coin:

$SS$

$\rightarrow \{H, T\}$

$\rightarrow \{HH, HT, TH, TT\}$

$\rightarrow \{HHH, \dots, TTT\}$

First flip top, 2nd flip left

$\backslash$	H	T
H		TH
T		

Use a tree:

Branch to show you can possibly get a head or tail, branch there for what you can get on the second flip (H or T again). The actual sample space is the leaf nodes of the tree

## Rolling a die

Rolling once:

$\{1, 2, 3, 4, 5, 6\}$

Twice:

$\{(1, 1), \dots, (6, 6)\}$  Possibilities:  $6^2 = 36$