

**Algebra & Pre-Algebra**  
**Statistics & Probability – Review sheet for Unit Test**

**Statistics Review:**

Mean, Median, Mode, Range; Stem & Leaf Plot; Box & Whisker Plot; Histograms

**Mean, Median, Mode, Range**

1. Bowling scores: 212, 125, 98, 140, 136, 105, 114, 135, 114

Mean	Mode
Median	Range

**Stem & Leaf Plot**

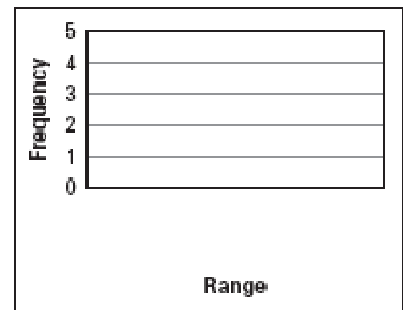
Make an ordered stem-and-leaf plot of the data.

1. 7, 8, 18, 24, 38, 45, 61, 55, 52, 19, 28, 35
2. 12.2, 13.3, 13.5, 12.4, 15.1, 14.2, 14.8, 11.1, 10.8, 15.6, 12.5

**Histograms**

Make a histogram of the data. Use appropriate intervals for your x-axis.

4. 49, 87, 65, 34, 46, 28, 18,  
68, 88, 92, 21, 18, 9, 34, 75



**Box & Whisker Plot**

Make a box-and-whisker plot of the data.

Give the value for:

- |                |                |
|----------------|----------------|
| range          | median         |
| lower quartile | upper quartile |
| lower extreme  | upper extreme  |

5. 108, 245, 375, 158, 552, 451, 358, 129, 264

**Probability Review:**

Probability; Counting Principle; Theoretical vs. Experimental probability;  
Combinations; Permutations; Independent vs. Dependent Events

**Probability**

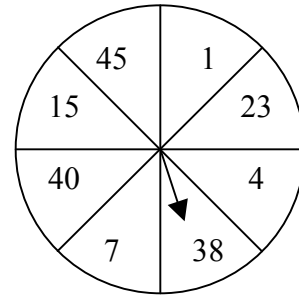
**seven red, five white and eight blue** marbles are in a bag. Find the probability of each event.

- |  |  |
|--|--|
| 1. red   | 2. green   |
| 3. Not white   | 4. Red or blue   |
| 5. Not blue or not red                                 | 6. white 1 <sup>st</sup> , then a blue 2 <sup>nd</sup> |
| 7. blue 1 <sup>st</sup> , then a white 2 <sup>nd</sup> | 8. A marble (red, white, or blue)                      |

The spinner at the right is equally likely to stop at any of the eight numbers.

Find the probability of each event.

1. An even number
2. A prime number
3. 23, or an even #
4. A multiple of 5
5. 45 on 1<sup>st</sup> spin, then a 4 on 2<sup>nd</sup>
6. 15, 4 or 23
7. An odd # 1<sup>st</sup>, then a 45 on 2<sup>nd</sup>
8. A number less than 50



### Counting Principle

1. Like a typical boy, Kyle does not care if any of his clothes match. Knowing this, how many outfits he can create with his eight shirts, six shorts and two pairs of shoes?
2. Janice goes to Pizza Hut for lunch buffet every day. If there are six different pizzas, 2 different breadsticks, four different salads, six different beverages. How many times can she get something different for lunch?

### Compound Events / Independent & Dependent Events

A basket of apples contains 6 red apples, 3 green apples, and 2 yellow apples. You randomly select 2 apples, one at a time. Find the probability that **both** are **yellow** if:

- a. you replace the first apple, then select the second.
- b. you eat the first apple, then select the second.

### Permutations

1.  ${}_{10}P_6$
2.  ${}_6P_3$
3.  ${}_{10}P_8$
4.  ${}_{12}P_3$

$${}_nP_r = \frac{n!}{(n-r)!}$$

Combinations

(order does NOT matter!)

$${}_nC_r = \frac{n!}{r!(n-r)!}$$

5. 15 teams compete in a synchronized swimming competition. Medals are awarded for first, second, third, fourth, and fifth place teams. In how many different ways can the medals be awarded?

### Combinations

1.  ${}_8C_2$
2.  ${}_9C_3$
3.  ${}_{12}C_8$
4.  ${}_{11}C_4$
5. Barry wants to plant 4 different types of trees in his yard. The nursery where he purchases the trees has 12 different types of trees. How many combinations of 4 tree types can he choose from?