

What is the difference in the way you solve these 2 **probability** questions?

**P(a or b)** Dice  $P(2 \text{ or } 3) = \frac{2}{6} = \frac{1}{3}$  (Simple add)

cards  $P(\text{jack or ace}) = \frac{8}{52}$  (add)

**P(a and b)**

Dice  $P(2 \text{ and } 3) = \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$  (Compound mult)

cards  $P(\text{jack and ace}) = \frac{4}{52} \cdot \frac{4}{52}$   
(jack, ace)

$$\frac{1}{13} \cdot \frac{1}{13} = \frac{1}{169}$$

Or- simple, addition  
And- Compound, multiplication

Is it possible to have a probability greater than 100%? *No*

*0 to 1                      100%                      highest possible*

Is it possible to have 0% probability?

*Yes    0 to 1    0%*

*Sometimes things cannot happen  
- 0% probability*