

May 6, 2015

5th
6th

Get out your homework



Monkey Snake

5/6 Compound Events

Which lock would you choose since its combo is the hardest one to guess?
Explain.

- 1 This lock has 3 wheels which are numbered from 0 to 9.



- 2 This lock is numbered from 0 to 39. Each combination uses three numbers in a right-left-right pattern.



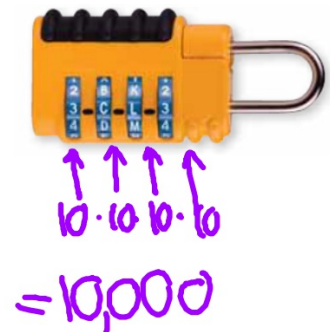
- 3 This lock has 4 wheels
Wheel 1: 0-9
Wheel 2: A-J
Wheel 3: K-T
Wheel 4: 0-9



Fundamental Counting Principle

An event M has m possible outcomes. An event N has n possible outcomes. The total number of outcomes of event M followed by event N is $m \times n$.

With this new information, look at the locks again. How many outcomes do they each have?



The set of all possible outcomes of one or more events is called the **sample space**.

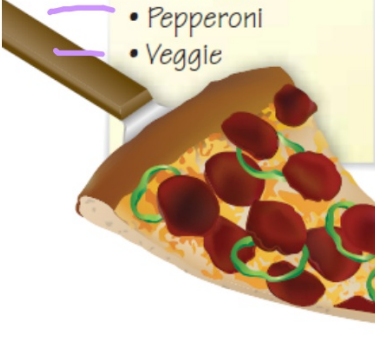
You can use tables and tree diagrams to find the sample space of two or more events.

Crust

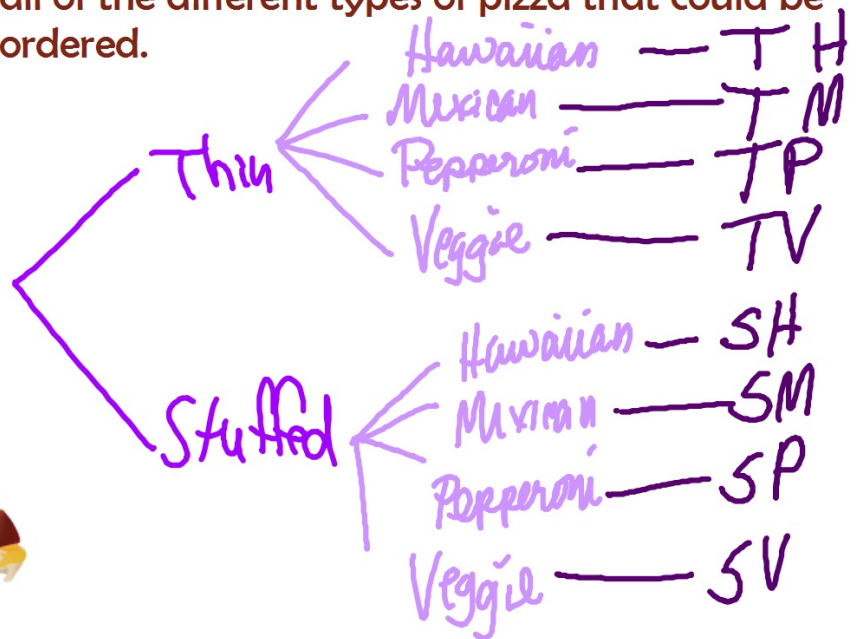
- Thin Crust
- Stuffed Crust

Style

- Hawaiian
- Mexican
- Pepperoni
- Veggie



Use a tree diagram to show the sample space of all of the different types of pizza that could be ordered.





Find the total number of possible outcomes of rolling a number cube and flipping a coin.

Use a chart this time.

	1	2	3	4	5	6
H	H1	H2	H3	H4	H5	H6
T	T1	T2	T3	T4	T5	T6

How many different outfits can you create using the clothes in this situation, if you must wear exactly one from each category?

Tops

- T-shirt
- Muscle Shirt
- Button-up
- Sweatshirt
- Tank top
- Flannel
- Belly Shirt

7

Bottoms

- Mini skirt
- Tutu
- Skinny Jeans
- Short shorts
- Leggings

5

Shoes

- Ballet slippers
- Jesus Sandals
- Twinkle Toes
- Top shoes
- Cleats
- 6" Heels

6

$7 \cdot 5 \cdot 6 = 210$ outfits

	1	2	3	4	5	6
H	H1	H2	H3	H4	H5	H6
T	T1	T2	T3	T4	T5	T6

Use the coin and number cube example to answer the following:

What is the probability of rolling a 2 with heads?

$$\frac{1}{6} \cdot \frac{1}{2} = \frac{1}{12}$$

What is the probability of rolling an odd number with tails?

$$\frac{3}{12} = \frac{1}{4}$$

What is the probability of rolling a number higher than 2 with either heads or tails?

$$\frac{8}{12} = \frac{2}{3}$$

Flip 3 coins.

Draw a tree diagram to show the sample space.



Use the sample space to find these probabilities:

$$P(H,H,H)=$$

$$P(\text{T's first followed by H's second})=$$

$$P(\text{at least 2 T's})=$$

$$P(\text{two H's in a row})=$$

Homework

Due