

Tuesday, April 16, 2019

- Warm-up

- If I flip two coins – what are all possible outcomes?

$\{H H\}$

$\{H T\}$

$\{T T\}$

$\{T H\}$

Sample
Space

- Sample Space & Frequency Tables

Objectives

Content: I will create and use **sample spaces** to organize **probability** and **outcomes**.

Social: I will brainstorm with my group and create **sample spaces**.

Language: I will use the definition of **probability** and **sample space** to organize and sort through situations.

Some Definitions

- Sample Space → ~~the~~ the set of ALL possible outcomes it could be in a table
compound events (2 or more together) → List all combinations
- Frequency Table (Organized) → a list of how many times outcomes occur
* more helpful if it is in order
- Histogram Graph = visual of frequency table
like a bar graph, but order matters (quantitative data)

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Using Sample Space

3, 5, 7

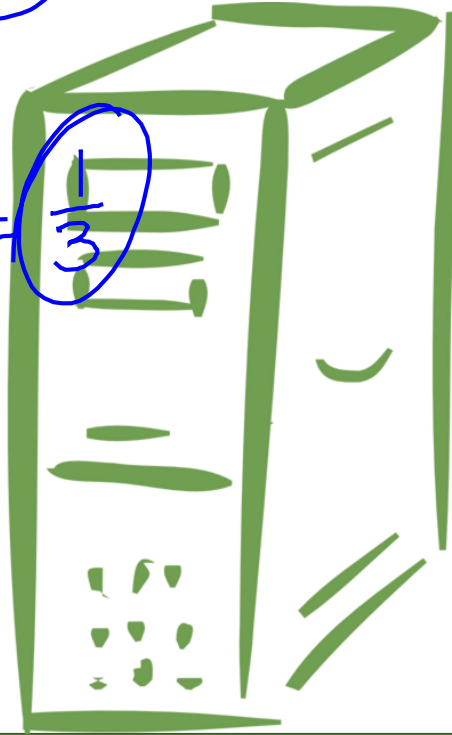
When a button is pressed, a computer program outputs a random odd number greater than 1 and less than 9. You press the button twice. What is the probability that the sum is 10? $+$

	3	5	7
3	6	8	10
5	8	10	12
7	10	12	14

Sample Space

Sums	frequency
6	1
8	2
10	3
12	2
14	1

$$\frac{3}{9} = \frac{1}{3}$$



Objectives

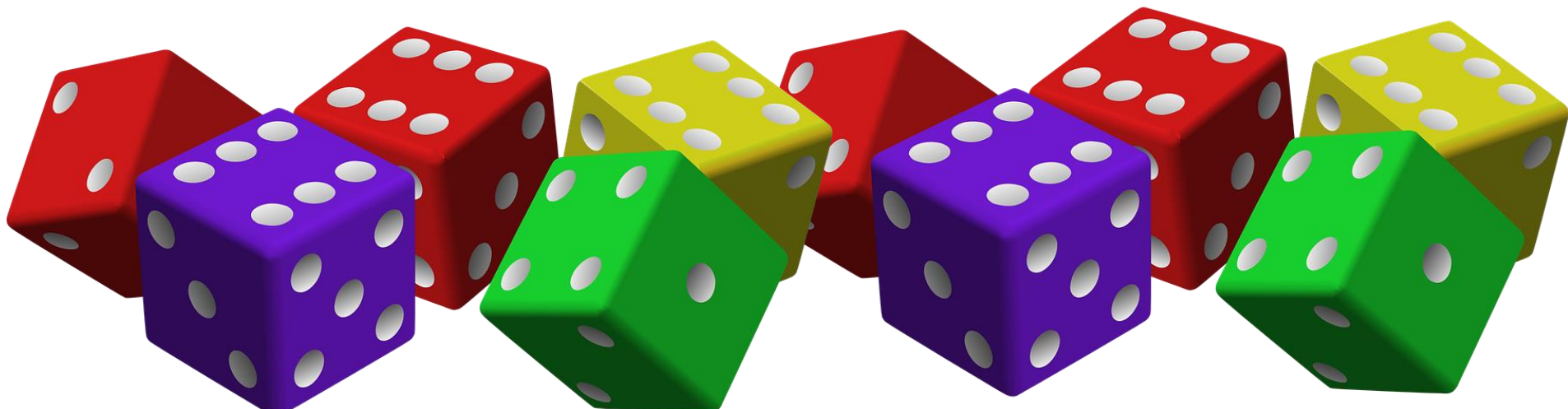
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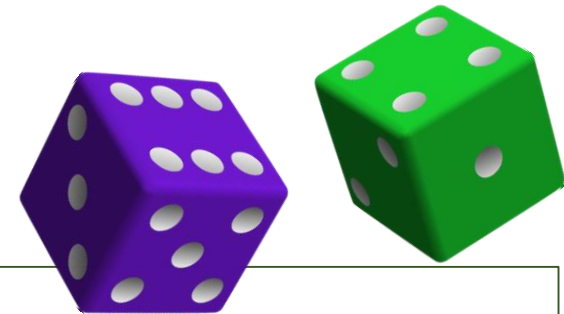
Dice Trivia

dots → "pips"



Sample Space for 2 dice

	1	2	3	4	5	6
1	1, 1 2	1, 2 3				
2						
3						
4						
5						
6						



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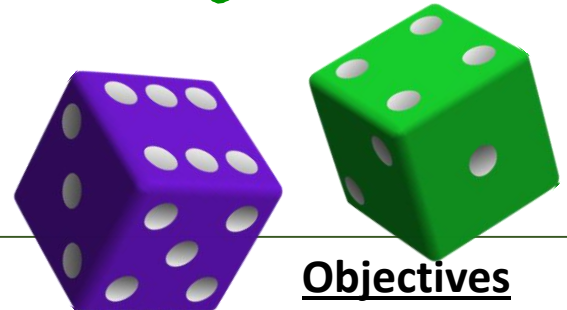
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Frequency Table for sum of 2 dice

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

total combinations
 36

$$P(\text{Doubles}) = \frac{6}{36} = \frac{1}{6}$$



Objectives

Sum	Frequency
2	1
3	2
4	
5	
6	
7	
8	
9	
10	
11	
12	

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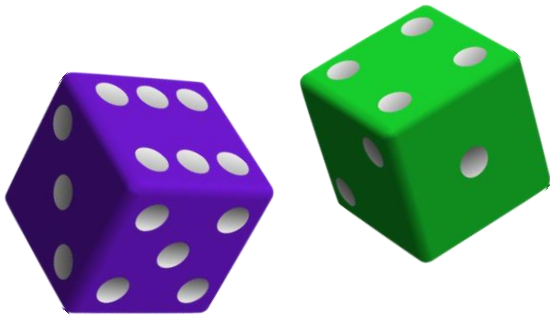
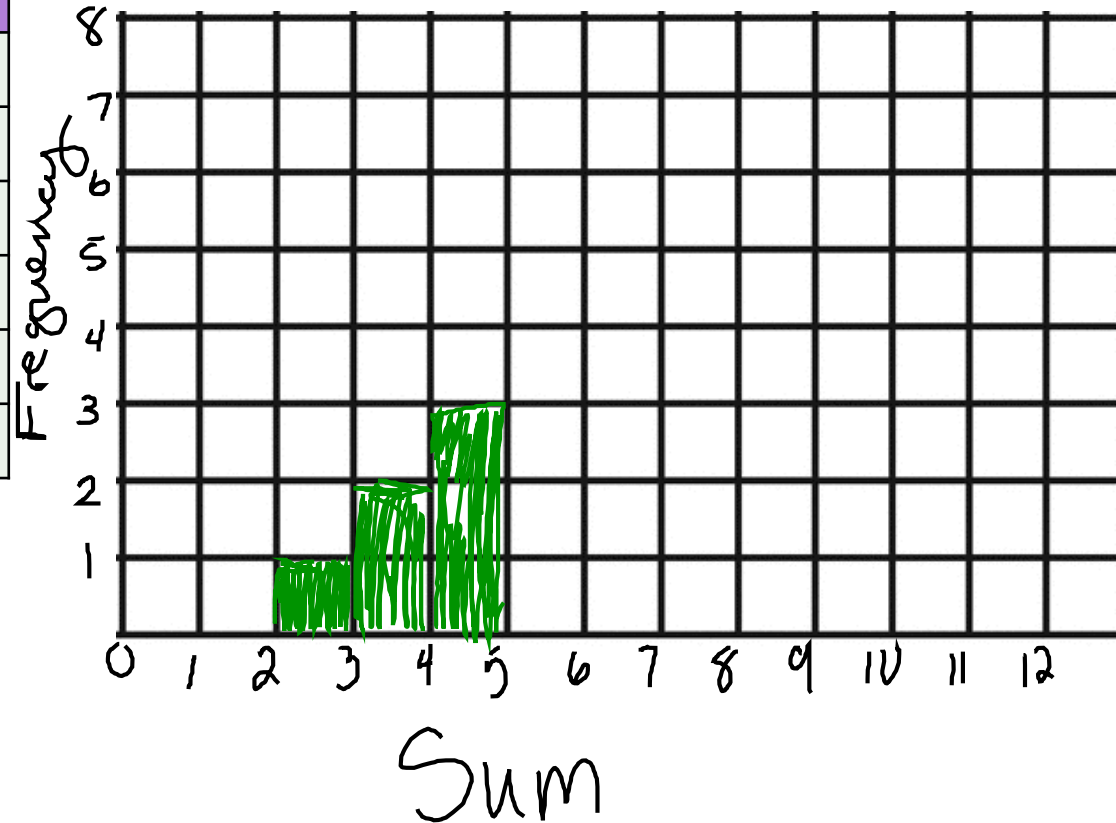
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Histogram for sum of 2 dice

Sum of 2 Dice

	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12



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