


Cornell Notes  AVID Institute of College Access	Topic/Objective: 3.3 Sample Space	Name:
	Diagrams and the Product Rule	Class/Period: 4
		Date: 1/4/17

Essential Question: Finding Probabilities is easy if you know $n(A)$ and $n(U)$

Questions: Notes: Recall: with Venn Diagrams, we know $P(A)$, $P(B)$, $P(A \cap B)$, $P(A \cup B)$, $P(A)^c$, ...

$$P(A) = \frac{n(A)}{n(U)}$$

Situations in which Venn diagrams are not helpful require a different approach:

Situation: A spinner (with equally-likely outcomes) is spun 3 times. The spinner has yellow, red and blue. We need the total number of possible outcomes $n(U)$ (Sample Space)

$$3 \cdot 3 \cdot 3 = 27$$

$$n(U) = 27$$

List all possibilities: y=yellow r=red b=blue

yyy yry yrr ybb
 yyr yby yrb ybr
 yyb

rrr ryr ryy rby
 rry ryb ~~ryb~~ rbb
 rrb rbr

bbb byb byy bry
 bbr ~~bbr~~ byr brr
 bby

Ex) $P(\text{exactly 1 blue}) = \frac{13}{27}$

Questions:

Notes:

Sample Space Diagram:

Rolling two Dice. list the sample space

Die 1

$$\underline{6 \cdot 6} = 6^2 \\ = 36$$

		1	2	3	4	5	6
Die 2	1	(1,1)	(1,2)	(1,3)	(1,4)	(1,5)	(1,6)
	2	(2,1)	(2,2)	(2,3)	(2,4)	(2,5)	(2,6)
	3	(3,1)	(3,2)	(3,3)	(3,4)	(3,5)	(3,6)
	4	(4,1)	(4,2)	(4,3)	(4,4)	(4,5)	(4,6)
	5	(5,1)	(5,2)	(5,3)	(5,4)	(5,5)	(5,6)
	6	(6,1)	(6,2)	(6,3)	(6,4)	(6,5)	(6,6)

$$P(\text{Sum is odd}) = \frac{18}{36} = \frac{1}{2}$$

3 Ex. 79 #1, 3, 4