



Topic/Objective: 3-D Mutually Exclusive Events

Name: _____
 Class/Period: 4
 Date: 1/3/17

Essential Question: What's special about mutually exclusive events?

Questions:

Notes: mutually exclusive - things that share no commonality
 Ex) a high student cannot be both a Junior and a senior of high school.
 Ex) cannot turn both left and right at the same time
 From warmup:



Ex) go up or down - be in 2 places dark and light at once

* Recall
 $P(A) = \frac{n(A)}{n(U)}$
 $n(A \cup B) = n(A) + n(B) - n(A \cap B)$

If A and B are mutually exclusive, then $n(A \cap B) = 0$
 $P(A \cap B) = 0$

If $n(A \cap B) = 0$ then A and B are mutually exclusive.

*

Logic Stuff

$P \leftrightarrow Q$

$P \rightarrow Q$

$Q \rightarrow P$

P implies Q

Q implies P

if P then Q

if Q then P

TRUE if an animal is a German Shepherd, then that animal is a dog

not TRUE if an animal is a dog then the animal is a German Shepherd

Questions:

Notes:

$$\underline{\text{Ex}}) P(A) = .4$$

$$P(B) = .5$$

$$P(A \cup B) = .9$$

Are A and B mutually exclusive?

$$\text{Know: } P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$.9 = .4 + .5 - P(A \cap B)$$

$$.9 = .9 - P(A \cap B)$$

$$0 = -P(A \cap B)$$

$$0 = P(A \cap B)$$

yes! →

HW 3D p. 76 #1, 2, 3