

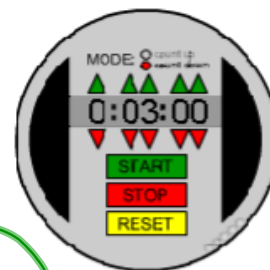
Home: 92

page 656-7 #7-15 and 17-27 odd, 33-39

Date: 1/20/09<http://www.mathvizza.com>Bell Work

1. Directions: Please simplify the following.

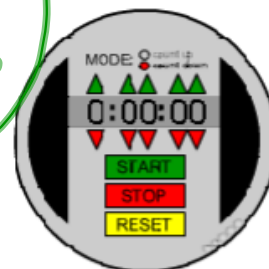
$$\left(\frac{2xt^5}{x^5t^2}\right)^{-2} = \left(\frac{x^5t^2}{2xt^5}\right)^2 \left(\frac{x^4}{2t^3}\right)^2$$




2. Directions: List out the sample space of flipping 2 coins.

TT
Tt
tT
tt

$$\frac{x^8}{4t^6}$$



Objectives

1. The students will determine if two given events are **inclusive** or **mutually exclusive**. 
$$\frac{\# \text{ of succ. poss.}}{\text{total possible}}$$
2. The students will compute **probabilities** for two inclusive events and two mutually exclusive events.

3. The students will comprehend the relationships between an event and its complement.
4. The students will compute the probability of a complement of an event.


Last Night's Homework

Please take out your combinations and permutations worksheet.



Answer Key.



Two Dice Outcomes

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

Event A=Rolling a total of 6. OR

Event B=Rolling a total of 4.

$P(A \text{ or } B)$

$$\frac{5}{36} + \frac{3}{36} = \frac{8}{36} = \frac{2}{9} = .222$$




Two Dice Outcomes

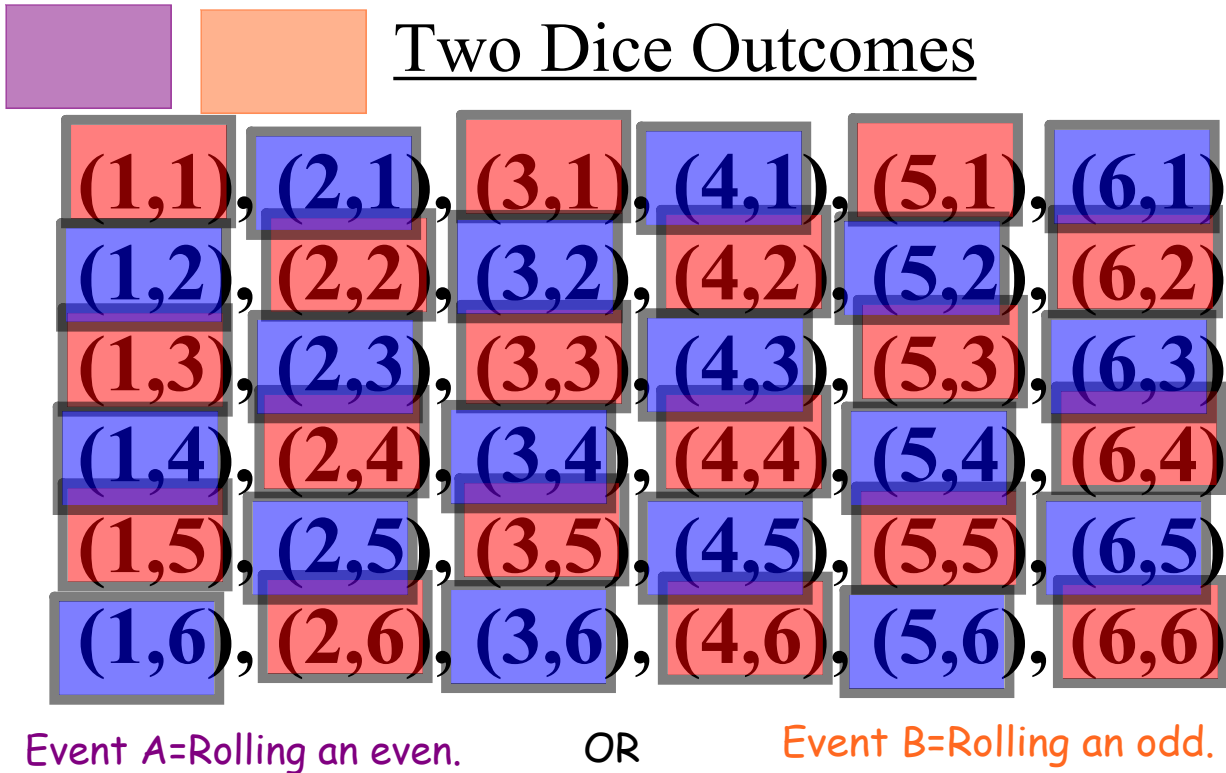
(1,1)	(2,1)	(3,1)	(4,1)	(5,1)	(6,1)
(1,2)	(2,2)	(3,2)	(4,2)	(5,2)	(6,2)
(1,3)	(2,3)	(3,3)	(4,3)	(5,3)	(6,3)
(1,4)	(2,4)	(3,4)	(4,4)	(5,4)	(6,4)
(1,5)	(2,5)	(3,5)	(4,5)	(5,5)	(6,5)
(1,6)	(2,6)	(3,6)	(4,6)	(5,6)	(6,6)

Event A=Rolling a total of 9. OR Event B=Rolling a 5 on only one die.

P(A or B)

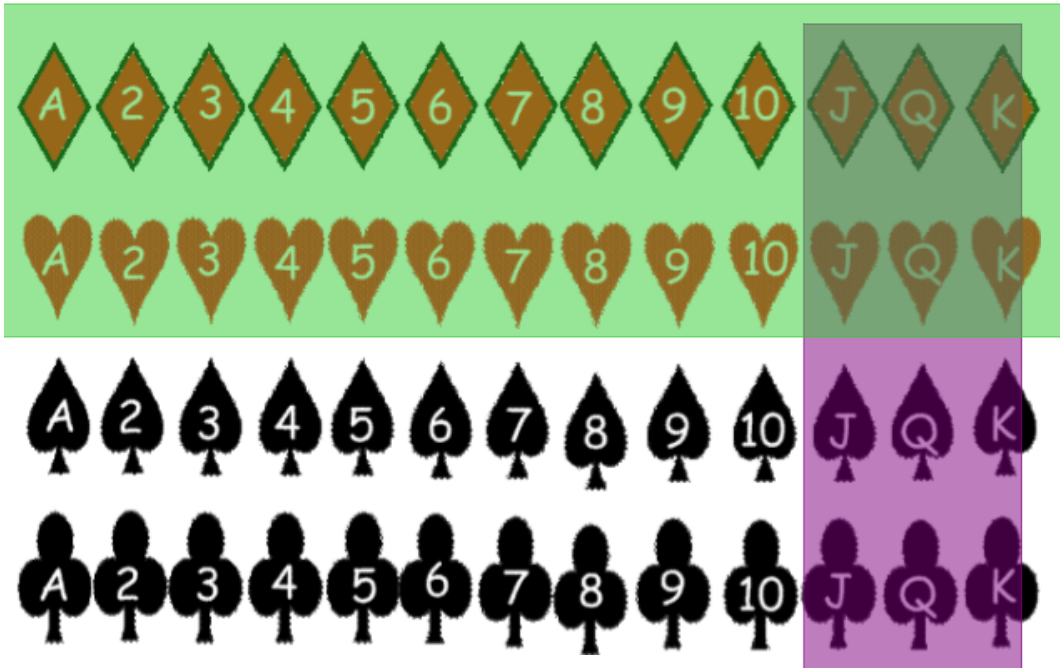
$$\frac{4}{36} + \frac{10}{36} - \frac{2}{36}$$

$$P(A) + P(B) - P(A \cap B)$$



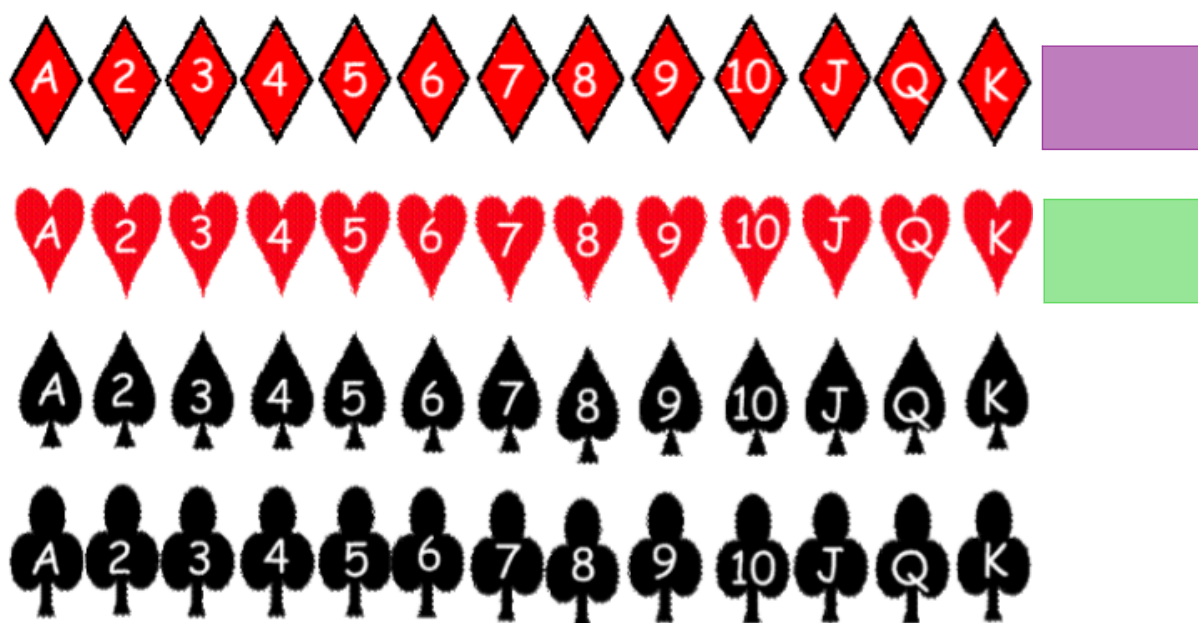
$P(A \text{ or } B)$

$$\frac{1}{2} + \frac{1}{2} = 1$$



Event A=Picking a Face Card OR Event B=Picking a Red Card

$$P(A \text{ or } B) = \frac{12}{52} + \frac{26}{52} - \frac{6}{52} = \frac{32}{52} = \frac{8}{13} \approx 61.5\%$$



Picking a Face Card

OR

Picking a Card <6

$P(A \text{ or } B)$

Vocabulary

Mutually Exclusive - 2 events w/ no overlap

Inclusive - 2 events w/ overlap
Queen or Red from a deck

Complement of an Event - in-event
Everything but the
ev

Probability of Mutually Exclusive Events

$P(A \text{ or } B)$

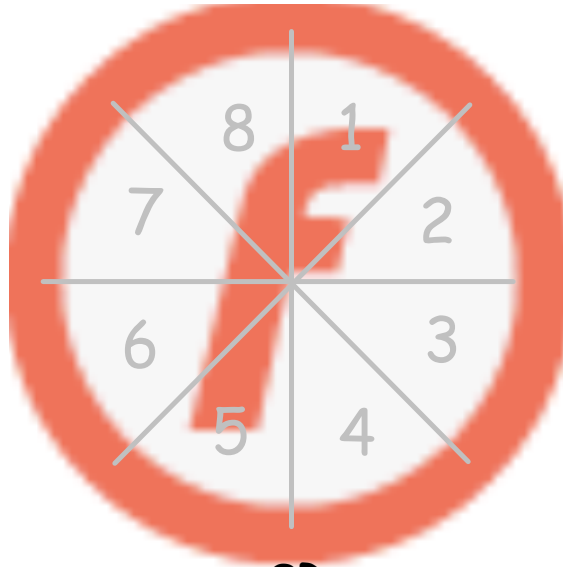
Probability of Inclusive Events

$P(A \text{ or } B)$

Spinning a blue
 Spinning a green
 Spinning a orange
 Spinning a red

Spinning an even
 Spinning an odd

Spinning a number ≤ 3
 Spinning a number > 4
 Spinning a number ≥ 5



OR

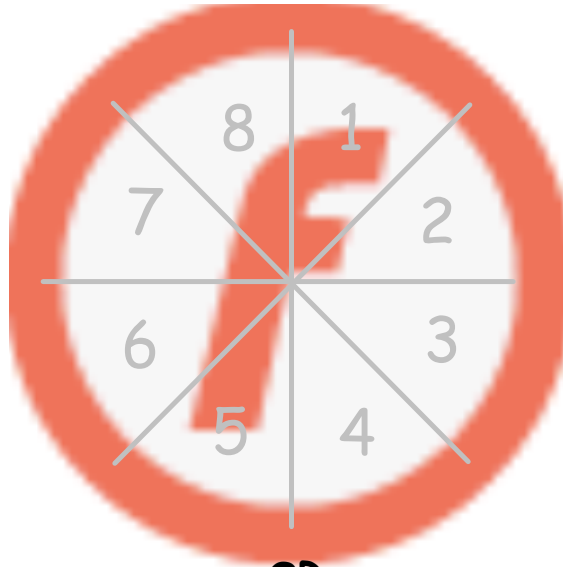
Inclusive Events

Spinning a 1
 Spinning a 2
 Spinning a 3
 Spinning a 4
 Spinning a 5
 Spinning a 6
 Spinning a 7
 Spinning a 8

Spinning a blue
 Spinning a green
 Spinning a orange
 Spinning a red

Spinning an even
 Spinning an odd

Spinning a number ≤ 3
 Spinning a number > 4
 Spinning a number ≥ 5



OR

Mutually Exclusive Events

Spinning a 1
 Spinning a 2
 Spinning a 3
 Spinning a 4
 Spinning a 5
 Spinning a 6
 Spinning a 7
 Spinning a 8

Now for
 Probabilities



The Complement of an Event

Def -



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

Event A=

rolling a total of 4.

P(A)

P(not A)

A simple formula

$$P(A^c) =$$