

Warm up:

You draw two cards from a deck without replacement.

- 1) P(2 diamonds) $\frac{13}{52} \cdot \frac{12}{51} = \frac{1}{17}$
- 2) P(2 face cards) $\frac{12}{52} \cdot \frac{11}{51} = \frac{11}{221}$
- 3) P(a pair of jacks) $\frac{4}{52} \cdot \frac{3}{51} = \frac{1}{221}$
- 4) P(any pair) $1 \cdot \frac{1}{17} = \frac{1}{17}$

13

1 5
 2 4
 3 3
 4 2
 5 1

46
 55
 64

HW Solutions

$$\frac{5}{36} \cdot \frac{\cancel{2}^1}{\cancel{36}} = \frac{5}{432}$$

$$\textcircled{24} \quad 4 \cdot \frac{\cancel{8}}{\cancel{14}} \cdot \frac{\cancel{7}}{13} = \textcircled{\frac{4}{13}}$$

$$\textcircled{20} \quad 0.6 \cdot 0.6 = 0.36$$

$$\textcircled{29} \quad 0.8 \cdot 0.3 = 0.24 \quad \textcircled{36\%} \quad \textcircled{24\%}$$

$$\textcircled{10} \frac{1 \cancel{4}}{5 \cancel{20}} \cdot \frac{3}{19} = \frac{3}{95}$$

$$\textcircled{12} \frac{\cancel{4} \cancel{12} \cancel{24}}{7 \cancel{21} \cancel{42}} \cdot \frac{23}{41} = \frac{92}{287}$$

$$\textcircled{4} \quad \frac{1}{3} \cdot \frac{1}{2} = \frac{1}{6}$$

$$\textcircled{10} \quad \frac{1}{2} \cdot \frac{1}{8} = \frac{1}{16}$$

$$\textcircled{8} \quad \frac{1}{2} \cdot \frac{1}{4} = \frac{1}{8}$$

$$Q1 \quad \frac{1}{3} \cdot \frac{5}{8} = \frac{5}{24}$$

$$Q2 \quad \frac{1}{4} \cdot \frac{1}{9} \cdot \frac{1}{26} \cdot \frac{4}{25} = \frac{1}{585}$$

$$\frac{1}{585}$$

$$\text{CP} \frac{4 \cancel{16}}{\cancel{5} \cdot \cancel{20}} \cdot \frac{\cancel{15}^3}{19} = \left(\frac{12}{19} \right)$$

$$\textcircled{2} \quad -\frac{3}{4} + \frac{1}{3} \\ -\frac{9}{12} + \frac{4}{12} = \textcircled{-\frac{5}{12}}$$

Showdown

A restaurant has 8 appetizers, 6 entrees, and 4 desserts. How many different 3 course meals are possible?

$$8 \cdot 6 \cdot 4 = 192$$

In a bag you have blue, red, green, and white Airheads. You reach in to grab one.

$$P(\text{White}) = ? \quad \frac{5}{20} = \left(\frac{1}{4}\right)$$

<u>Color</u>	<u>Number of Pieces</u>
Blue	7
Red	5
Green	3
White	5

$$P(\text{Red or Green}) = ? \quad \frac{8}{20} = \frac{2}{5}$$

<u>Color</u>	<u>Number of Pieces</u>
Blue	7
Red	5
Green	3
White	5

$$P(\text{not Blue}) = ? \quad \frac{13}{20}$$

<u>Color</u>	<u>Number of Pieces</u>
Blue	7
Red	5
Green	3
White	5

The probability of winning Game A is $\frac{4}{5}$. The probability of winning Game B is $\frac{7}{10}$. Which game are you more likely to win?

A

$$4 \div 5 = 0.8$$

$$7 \div 10 = 0.7$$

$$\frac{4}{5} = \frac{8}{10}$$

If you roll a die twice, what is the probability of rolling a 6 and then an even number?

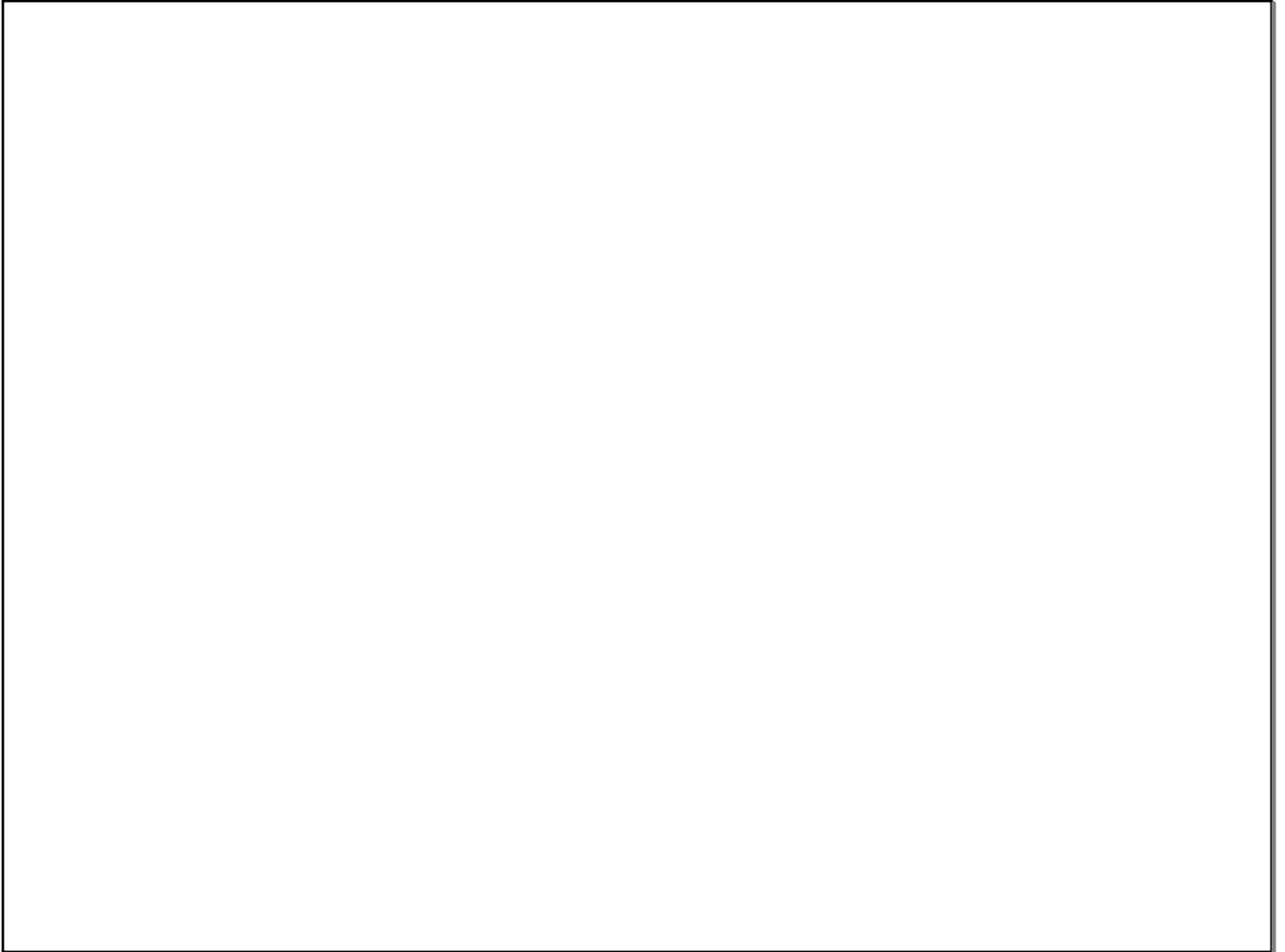
$$\frac{1}{6} \cdot \frac{1}{2} = \frac{1}{12}$$

You roll two die and observe the sum. What is the probability of rolling an 8?

2 6
3 5
4 4
5 3
6 2

$$\frac{5}{36}$$

$$P(3) \\ \begin{array}{l} 1 \ 2 \\ 2 \ 1 \end{array} \\ \frac{2}{36} = \frac{1}{18}$$



You put a red marble, a blue marble, and a green marble into a bag. After drawing a marble from the bag 30 times, you recorded the following results:

red	13
blue	8
green	9

What is the theoretical probability of drawing a red marble from the bag? $\frac{1}{3}$

What is the experimental probability of drawing a red marble from the bag? $\frac{13}{30}$

You pick a card out of a deck, put it aside and then pick another. What is the probability that you choose an ace and then a 2?

$$\frac{1}{13} \cdot \frac{4}{51} = \frac{4}{663}$$

You have 5 pairs of pants and 7 shirts. How many different outfits can you make?

35

Roll 2 dice

$$P(\text{sum of } 9) = \frac{4}{36} = \frac{1}{9}$$

6+3
3+6

