

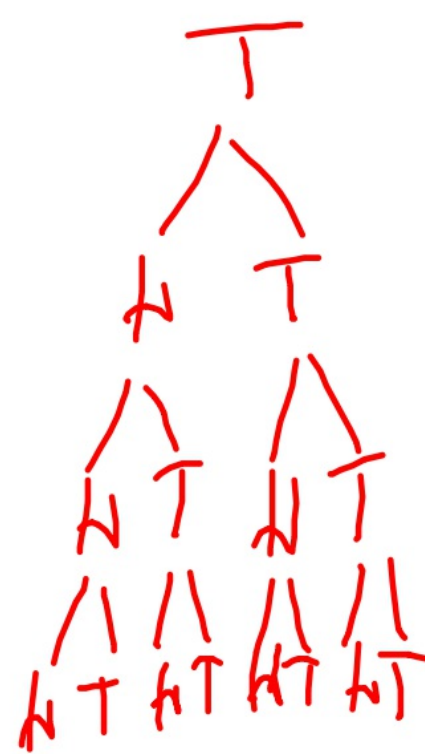
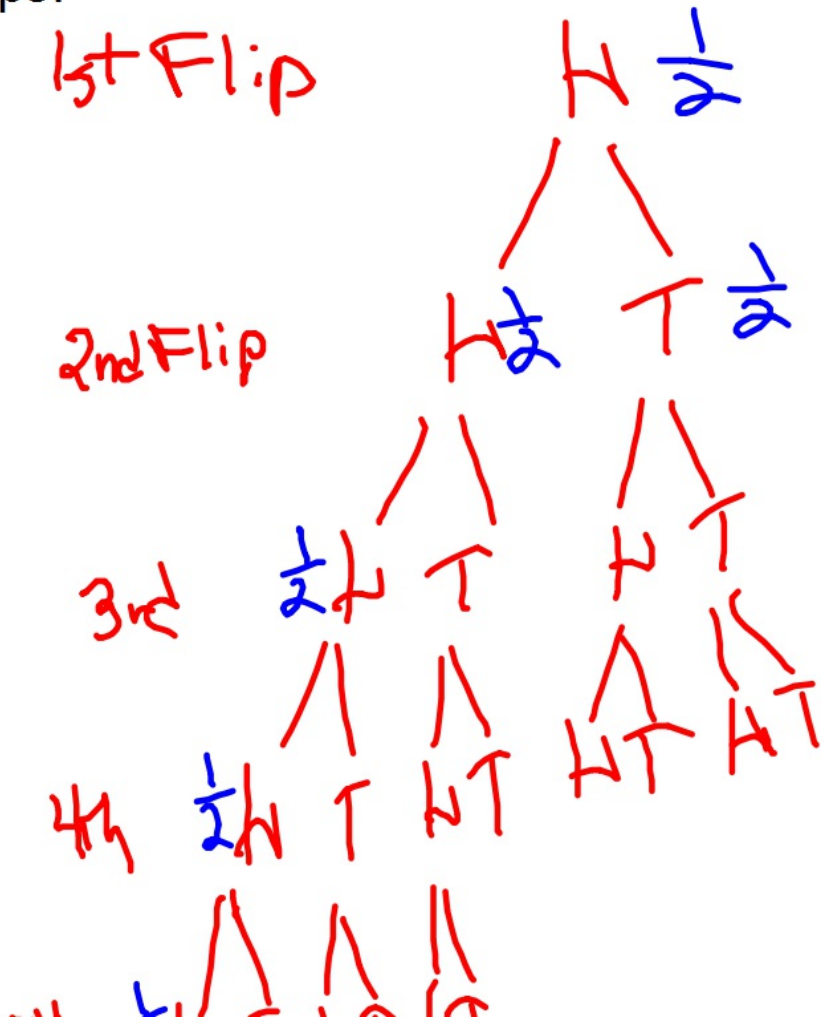
warm-up

1. Grab a chromebook
2. Circle the numbers of the 3 most difficult problems on the study guide.

12, 13, 14, 15, 7,

Study Guide Review

1. Create a tree diagram to show all possible outcomes after five coin flips.



What is

$$P(5 \text{ Heads}) = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \boxed{\frac{1}{32}}$$

2. If two dice are thrown, what is the probability of getting a sum of 6?

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

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

3. In how many ways can the offices of president, secretary and treasurer be filled from a group of twelve people?

$${}_{12}P_3 = \boxed{1320}$$

Permutation -
order
matters

4. In how many ways can 10 questions out of 14 be chosen on an examination?

$${}^{14}C_{10} = 1001$$

Combination -
Order
~~does not~~
matter

5. There are 6 freshmen, 3 sophomores, 2 juniors, and 5 seniors to choose from to form a committee. How many ways can someone choose 2 from each class for the committee?

$$6C2 \cdot 3C2 \cdot 2C2 \cdot 5C2 =$$
$$15 \cdot 3 \cdot 1 \cdot 10 = \boxed{450}$$

6. In a drawer are 4 white gloves, 7 black gloves, and 9 brown gloves. If a glove is picked at random, what is the probability that it will be either white or brown?

$$\begin{array}{c} \text{white} \\ \frac{4}{20} \end{array} + \begin{array}{c} \text{Brown} \\ \frac{9}{20} \end{array} = \boxed{\frac{13}{20}}$$

Or \rightarrow Add

7. The probability that Toni will solve a certain problem is $\frac{2}{3}$, that Javier will solve it is $\frac{4}{5}$, and that Lindsey will solve it is $\frac{1}{4}$, what is the probability that Toni and Javier will solve it, and Lindsey will not solve it?

$$\begin{array}{ccc} \text{Toni} & \text{Javier} & \text{Lindsey} \\ \frac{2}{3} & \cdot & \frac{4}{5} \cdot \frac{3}{4} = \frac{24}{60} = \frac{6}{15} \boxed{\frac{2}{5}} \end{array}$$

$$P(\text{Lindsey Not Solve}) = 1 - \frac{1}{4} = \frac{3}{4}$$