① If you have 4 red marbles, 3 green marbles and 7 yellow ones, what is the probability that you will draw a red marble?

$$4 + 7 + 3 = 14$$

$$\frac{4}{14} \div 2 = \boxed{\frac{2}{7}}$$

② What is the probability when rolling one die two times that you get a 2 the first time and a 5 the second time?

$$\frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$$

③ If you roll a dice three times, what is the probability that you will roll a 1 all three times?

$$\frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{216}$$

④ A bag of marbles contains 3 red, 5 orange, and 4 blue marbles. What is the probability of randomly selecting a marble that is not blue?
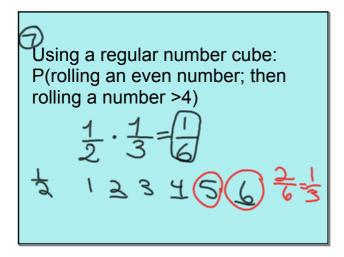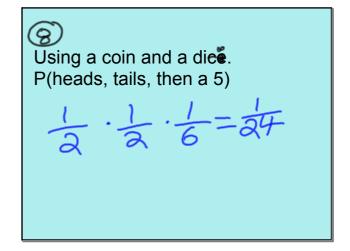
$$\frac{8}{12} = \boxed{\frac{2}{3}}$$

⑤ If 3 out of 5 people prefer pizza over chicken, how many people out of 100 would prefer pizza?

$$5\overline{)300} \quad \frac{3}{5} = \frac{x}{100} \quad \frac{5x}{5} = \frac{300}{5}$$

x = 60 people perfer Pizza.

⑥ If you have 4 shirts, 3 pairs of pants and 5 pairs of shoes, how many outfits can you make?

$$4 \times 3 \times 5 = 60 \text{ outfits}$$

7 Using a regular number cube:
P(rolling an even number; then
rolling a number >4)

$$\frac{1}{2} \cdot \frac{1}{3} = \boxed{\frac{1}{6}}$$

$\frac{1}{2}$ 1 2 3 4 ⑤ ⑥ $\frac{2}{6} = \frac{1}{3}$

May 7-8:30 AM

8 Using a coin and a die.
P(heads, tails, then a 5)

$$\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{6} = \frac{1}{24}$$

May 7-11:19 AM

9 Draw a tree diagram to show all of
the possible outcomes of spinning
a 4 section spinner with red, blue,
green and yellow and flipping a
coin?

R < H/T   RH RT
B < H/T   BH BT   } Sample Space
G < H/T   GH GT
Y < H/T   YH YT
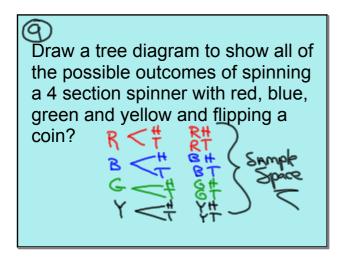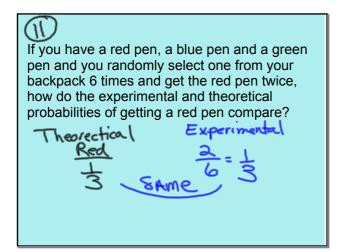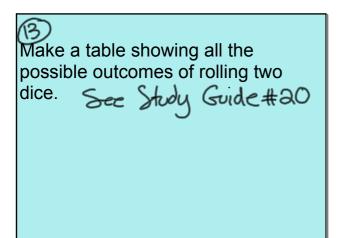
May 7-12:06 PM

10 How many possible dinner choices
are there if you select one from
each category? 4 entrees, 3
drinks, and 4 desserts

4·3 = 12
×4
48

48 dinner
Choices

May 7-2:54 PM

11 If you have a red pen, a blue pen and a green
pen and you randomly select one from your
backpack 6 times and get the red pen twice,
how do the experimental and theoretical
probabilities of getting a red pen compare?

Theorectical   Experimental
Red $\frac{2}{6} = \frac{1}{3}$
$\frac{1}{3}$ SAME

May 7-2:56 PM

12 At Hightower 3/4 of all students
have a music class and 1/2 of all
students are in PE. If a student is
picked at random, what is the
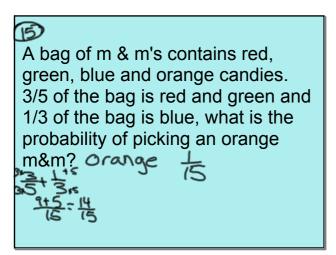probability that they will have music
and PE? P(music and PE)

$$\frac{3}{4} \cdot \frac{1}{2} = \boxed{\frac{3}{8}}$$

May 7-2:59 PM

13

Make a table showing all the possible outcomes of rolling two dice. *See Study Guide #20*

May 7-3:09 PM

14

If Debra has 4 skirts, 10 shirts, and 5 scarves how many possible combinations of outfits can she create?

$4 \times 10 \times 5 = 200$ outfits

May 7-3:33 PM

15

A bag of m & m's contains red, green, blue and orange candies. 3/5 of the bag is red and green and 1/3 of the bag is blue, what is the probability of picking an orange m&m? Orange $\frac{1}{15}$

$$\frac{3}{5} + \frac{1}{3}$$
$$\frac{9}{15} + \frac{5}{15} = \frac{14}{15}$$

May 7-3:36 PM

ANSWER KEY
1. 2/7
2. 1/36
3. 1/216
4. 2/3
5. 60 people
6. 60 outfits
7. 1/6
8. 1/24

9. R..H,T

   B..H,T

   G..H,T

   Y..H,T
10. 48 choices
11. the probabilities are the same 1/3
12. 3/8
13. see table on study guide question #20
14. 200 outfits
15. 1/15 orange

May 7-3:44 PM