Name _____ Class _____ Date _____

Practice 9-3

Sample Spaces

Make a table to show the sample space and find the number of outcomes. Then find the probability.

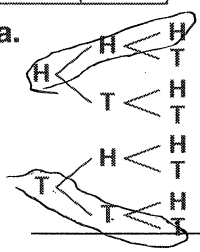
1. A theater uses a letter to show which row a seat is in, and a number to show the column. If there are eight rows and ten columns, what is the probability that you select a seat at random that is in column 1?

$\frac{1}{10}$ or 10%

	1	2	3	4	5	6	7	8	9	10
A	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
B	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
C	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
D	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
E	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10
F	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
G	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
H	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10

Make a tree diagram. Then find the probability.

2. A coin is tossed three times.
   a. Make a tree diagram that shows all the possible outcomes of how the coin will land.
   b. Find the probability that the coin will land heads up all three times or tails up all three times.

2a. 

2b. $\frac{1}{4}$ $\frac{2}{8}$ or $\frac{1}{4}$

Use the counting principle.

3. A pizza company makes pizza in three different sizes: small, medium, and large. There are four possible toppings: pepperoni, sausage, green pepper, and mushroom. How many different kinds of pizza with one topping are available? $3 \cdot 4 = 12$

12 kinds

4. You can choose from three types of sandwiches for lunch and three types of juice. How many possible lunch combinations of sandwich and juice can you have? $3 \cdot 3 = 9$

9

Susan has red, blue, and yellow sweaters. Joanne has green, red, and white sweaters. Diane's sweaters are red, blue, and mauve. Each girl has only one sweater of each color and will pick a sweater to wear at random. Find each probability.

See sample space next page ↓

5. *P*(each girl chooses a different color)

$\frac{17}{27}$

6. *P*(each girl chooses the same color)

$\frac{1}{27}$

7. *P*(two girls choose the same color, and the third chooses a different color)

$\frac{1}{3}$

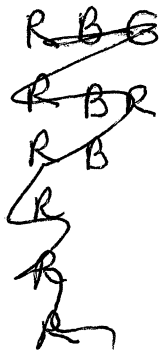
8. *P*(each girl chooses a red sweater)

$\frac{1}{27}$

3 X 3 X 3 = 27

Susan Joane Diane

R B Y G. R W R B M



RGR	BGR	YGR
RGB	BGB	YGB
RGM	BGM	YGM
RRR	BRR	YRR
RRB	BRB	YRB
RRM	BRM	YRM
RWR	BWR	YWR
RWB	BWB	YWB
RWM	BWM	YWM

17/27