Lesson 9-2

Example 1 Find the Sample Space
CLOTHING Sara needs to select an outfit for the day. She can choose from jeans or a skirt for her bottoms. Sara can choose from a t-shirt or a blouse for her top and can choose either sneakers or loafers for her shoes. Find the sample space for all possible outfits Sara can create.

Make a table that shows all of the possible outcomes.

jeans	t-shirt	sneakers
jeans	t-shirt	loafers
jeans	blouse	sneakers
jeans	blouse	loafers
skirt	t-shirt	sneakers
skirt	t-shirt	loafers
skirt	blouse	sneakers
skirt	blouse	loafers

Example 2 Find the Sample Space

HOUSE PAINTING The Top Job Painting Company offers a selection of white, yellow, cream, and blue paint for painting houses along with trim colors of black, red, and green for painting shutters and doors. Which list shows all possible color combinations?

A

white	black
white	red
white	green
yellow	black
yellow	red
cream	red
cream	green
blues	black
blue	red
blue	green

B

white	red
white	green
yellow	black
yellow	red
yellow	green
cream	black
blue	black
blue	red

C

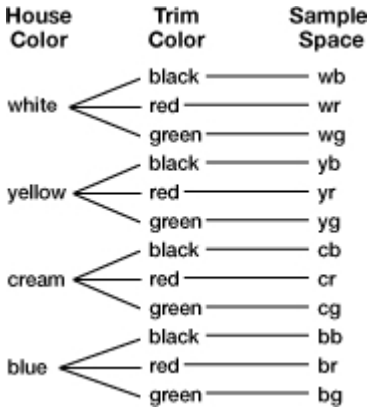
white	black
white	red
white	green
yellow	black
yellow	red
yellow	green
cream	black
cream	red
cream	green
blue	black
blue	red
blue	green

D

white	black
white	green
yellow	red
cream	black
cream	green
blue	red

Read the Test Item
There are four different choices for the color of the house and three different choices for trim color. Find all of the house-trim color combinations.

Solve the Test Item
Make a tree diagram to show the sample space.



There are 12 different color combinations. The answer is C.

Example 3 Determine Fairness of a Game

GAMES Samantha tosses a quarter and a dime. If heads comes up only once, Samantha wins the game. Otherwise, Kevin wins. Find the sample space for the game. Then determine whether the game is fair.

There are four equally likely outcomes for this game – HH, HT, TH, TT. Two of the outcomes favor Samantha (HT, TH) and two of the outcomes favor Kevin (HH, TT). So, the probability that each player can win is $\frac{2}{4}$ or $\frac{1}{2}$. So the game is fair.