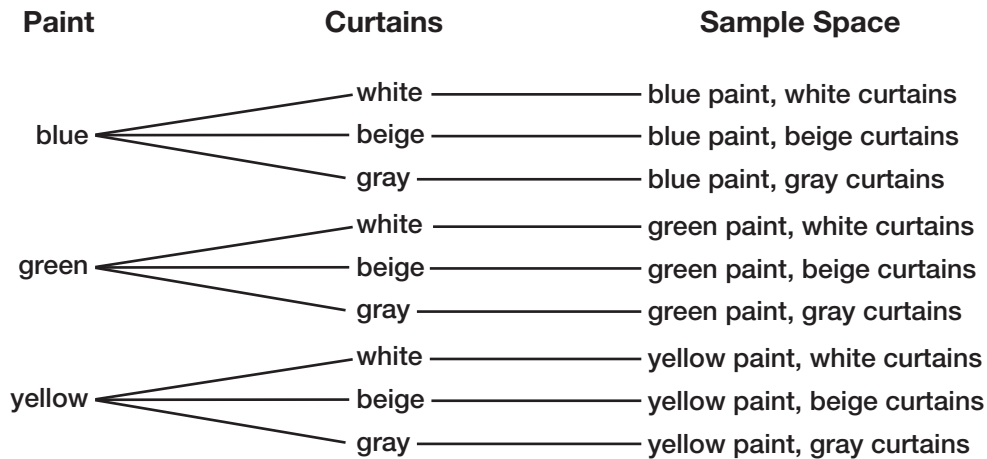# Homework Practice

Probability of Compound Events

For each situation, find the sample space using a tree diagram.
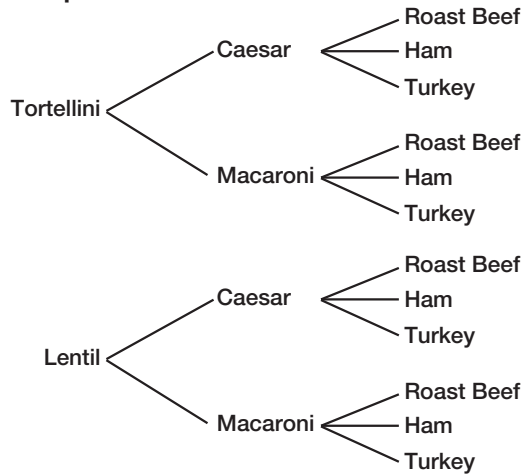
1. choosing blue, green, or yellow wall paint with white, beige, or gray curtains

| Paint | Curtains | Sample Space |

blue — white — blue paint, white curtains
blue — beige — blue paint, beige curtains
blue — gray — blue paint, gray curtains
green — white — green paint, white curtains
green — beige — green paint, beige curtains
green — gray — green paint, gray curtains
yellow — white — yellow paint, white curtains
yellow — beige — yellow paint, beige curtains
yellow — gray — yellow paint, gray curtains

2. choosing a lunch consisting of a soup, salad, and sandwich from the menu shown in the table

Soup	Salad	Sandwich
Tortellini	Caesar	Roast Beef
Lentil	Macaroni	Ham
		Turkey

Sample Answer :

Tortellini — Caesar — Roast Beef, Ham, Turkey
Tortellini — Macaroni — Roast Beef, Ham, Turkey
Lentil — Caesar — Roast Beef, Ham, Turkey
Lentil — Macaroni — Roast Beef, Ham, Turkey

3. GAME Kimiko and Miko are playing a game in which each girl rolls a number cube. If the sum of the numbers is a prime number, then Miko wins. Otherwise Kimiko wins. Find the sample space. Then determine whether the game is fair.

Sum = 2	Sum = 3	Sum = 4	Sum = 5	Sum = 6	Sum = 7	Sum = 8	Sum = 9	Sum = 10	Sum = 11	Sum = 12
$1+1=2$	$2+1=3$ $1+2=3$	$1+3=4$ $2+2=4$ $3+1=4$	$1+4=5$ $2+3=5$ $3+2=5$ $4+1=5$	$1+5=6$ $2+4=6$ $3+3=6$ $4+2=6$ $5+1=6$	$1+6=7$ $2+5=7$ $3+4=7$ $4+3=7$ $5+2=7$ $6+1=7$	$2+6=8$ $3+5=8$ $4+4=8$ $5+3=8$ $6+2=8$	$3+6=9$ $4+5=9$ $5+4=9$ $6+3=9$	$4+6=10$ $5+5=10$ $6+4=10$	$5+6=11$ $6+5=11$	$6+6=12$

$P(\text{Kimiko}) = \dfrac{3+5+5+4+3+1}{36} = \dfrac{7}{12}$; **The game is unfair because Kimiko has more of a chance to win.**