Lesson 10-4

Example 1

FOOD SERVICE The menu at a diner offers the following choices:

Salads	Main Dishes
Caesar	Fried Chicken
Spinach	Roast Beef
Fruit	Grilled Salmon
	Beef Stew
	Spaghetti and Meatballs
	Vegetarian Stir-Fry

Side Dishes	Desserts
Mashed Potatoes	Chocolate Cake
French Fries	Vanilla Ice Cream
Rice Pilaf	Apple Pie
Grilled Vegetables	Orange Sherbet
Applesauce	

How many different meals consisting of one salad, one main course, one side dish, and one dessert can be ordered at the diner?

Solution

There are four stages involved in choosing a meal: select a salad, select a main course, select a side dish, and select a dessert.

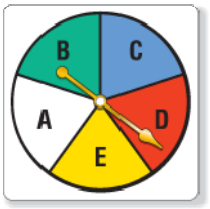
Multiply the number of choices at each stage.

salad	·	main dish	·	side dish	·	dessert	=	number of possible meals
3	·	6	·	5	·	4	=	360

There are 360 possible meals that can be ordered.

Example 2

In a game, a player tosses a number cube and then spins this spinner. Using the counting principle, find *P*(even number, A or D).



Solution

First find the number of possible outcomes.

number cube	·	spinner	=	number of possible outcomes
6	·	5	=	30

Then find the number of favorable outcomes.

There are 3 even numbers: 2, 4, and 6.
There are 2 letters: A and D.

numbers	·	letters	=	number of favorable outcomes
3	·	2	=	6

$$P(\text{even number, A or D}) = \frac{6}{30} = \frac{1}{5}$$