

Practice 9-4

Compound Events

Each letter in the word MASSACHUSETTS is written on a card. The cards are placed in a basket. Find each probability.

1. What is the probability of selecting two S's if the first card is replaced before selecting the second card?

$$\frac{16}{169}$$

2. What is the probability of selecting two S's if the first card is not replaced before selecting the second card?

$$\frac{12}{156} = \frac{1}{13}$$

You roll a fair number cube. Find each probability.

3. $P(3, \text{ then } 5)$

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

4. $P(2, \text{ then } 2)$

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

5. $P(5, \text{ then } 4, \text{ then } 6)$

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

6. $P(6, \text{ then } 0)$

$$0 \quad \frac{1}{6} \cdot \frac{0}{6}$$

Four girls and eight boys are running for president or vice president of the Student Council. Find each probability.

7. Find the probability that two boys are elected.

$$\frac{14}{33} \quad \frac{8}{12} \cdot \frac{7}{11}$$

8. Find the probability that two girls are elected.

$$\frac{1}{11} \quad \frac{4}{12} \cdot \frac{3}{11}$$

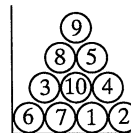
9. Find the probability that the president is a boy and the vice president is a girl.

$$\frac{8}{33} \quad \frac{8}{12} \cdot \frac{4}{11}$$

10. Find the probability that the president is a girl and the vice president is a boy.

$$\frac{8}{33} \quad \frac{4}{12} \cdot \frac{8}{11}$$

A box contains ten balls, numbered 1 through 10. Marisha draws a ball. She records its number and then returns it to the bag. Then Penney draws a ball. Find each probability.



11. $P(9, \text{ then } 3)$

$$\frac{1}{100} \quad \frac{1}{10} \cdot \frac{1}{10} = \frac{1}{100}$$

12. $P(\text{even, then odd})$

$$\frac{1}{4} \quad \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$$

13. $P(\text{odd, then } 2)$

$$\frac{1}{20} \quad \frac{1}{2} \cdot \frac{1}{10} = \frac{1}{20}$$

14. $P(\text{the sum of the numbers is } 25)$

$$0 \quad 10+10 \text{ is highest which is } 20$$

15. $P(\text{prime, then composite})$

$$\frac{1}{5} \quad \frac{2}{5} \cdot \frac{1}{2} = \frac{1}{5}$$

16. $P(\text{a factor of } 8, \text{ then a multiple of } 2)$

$$\frac{1}{5} \quad \frac{2}{5} \cdot \frac{1}{2} = \frac{1}{5}$$

Factors of 8: 1, 8, 2, 4

Practice

Neither