Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**R6-1** Applications of Probability

|  |  |  |  |
| --- | --- | --- | --- |
| Employment Status | Under 18 | Over 18 | Total |
| Has Job | 20 | 587 | 607 |
| Does Not Have Job | 245 | 92 | 337 |
| Total | 265 | 679 | 944 |

1. The table shows data from a survey   
   about age and employment status. What is the probability that a randomly selected person surveyed has a job, given that the person is less than 18 years old?

a) 0.64 b) 0.08 c) 0.72 d) 0.21

1. For which set of probabilities would events *A* and *B* be independent?

a) *P*(*A*) = 0.25; *P*(*B*) = 0.25; *P*(*A* and *B*) = 0.5

b) *P*(*A*) = 0.08; *P*(*B*) = 0.4; *P*(*A* and *B*) = 0.12

c) *P*(*A*) = 0.16; *P*(*B*) = 0.24; *P*(*A* and *B*) = 0.32

d) *P*(*A*) = 0.3; *P*(*B*) = 0.15; *P*(*A* and *B*) = 0.045

1. Assume that the following events are independent:

The probability that a high school senior will go to college is 0.72.

The probability that a high school senior will go to college and live on campus is 0.46.

What is the probability that a high school senior will live on campus, given that the person will go to college?

a) 0.26 b) 0.33 c) 0.57 d) 0.64

1. A random survey was conducted about gender and hair color.   
   This table records the data.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Hair Color | Brown | Blonde | Red | Total |
| Male | 548 | 876 | 82 | 1506 |
| Female | 612 | 716 | 66 | 1394 |
| Total | 1160 | 1592 | 148 | 2900 |

What is the probability that a randomly selected   
person has male or has red hair?

a) 0.519 b) 0.542

c) 0.028 d) 0.051

1. Joe surveyed 240 men and 285 women about their vehicles. Of those surveyed, 155 men and 70 women said they own a red vehicle. What is the probability of choosing a woman and a person who does NOT own a red vehicle?

a) 14/57 b) 71/105 c) 74/105 d) 43/105

1. Bianca spins two spinners that have four equal sections numbered 1 through 4. If she spins a 4 on at least one spin, what is the probability that the sum of her two spins is an odd number?

a) 1/4 b) 7/16 c) 4/7 d) 11/16

1. Each letter of the alphabet is written on separate cards in red ink. The cards are placed in a container. Each letter of the alphabet is also written on separate cards in black ink. The cards are placed in the same container. What is the probability that a card randomly selected from the container has a letter written in black ink or the letter is A or Z?

a) 1/2 b) 7/13 c) 15/26 d) 8/13

9) Paul has a spinner with the colors red, green, blue, orange, and purple on it. He also has a six-sided number cube. The probability of the arrow of the spinner stopping on green is 1/5 and the probability of getting a number greater than 2 when tossing the number cube is 4/6. What is the probability of landing on green and tossing a number greater than 2?

a) 2/15 b) 3/10 c) 7/10 d) 13/15

|  |  |  |  |
| --- | --- | --- | --- |
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10) What is the probability of selecting someone who has a job or is over 18?

11) Joe took 2 cups out of a box. There are 3 blue cups, 5 green cups, 3 red cups and 4 yellow cups. The first cup that picked was green. What is the probability that the second cup is red?

12) In the survey about hair color,

what is the probability of selecting a female given she has brown hair?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
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