1. At Roberta’s cafe half of her regular customers order her famous low-fat chicken sandwich. The probability of a regular customer ordering the chicken sandwich and losing weight last month was 40%. What is the probability of someone losing weight given that they regularly ordered the sandwich?

2. A grab bag contains 7 football cards and 3 basketball cards. An experiment consists of taking one card out of the bag, then selecting another card. What is the probability of selecting a football card, replacing it, and then selecting a basketball card? If necessary, round answers to the nearest hundredth.

3. A bag contains hair ribbons for a spirit rally. The bag contains 5 black ribbons and 7 green ribbons. Lila selects a ribbon at random, then Jessica selects a ribbon at random from the remaining ribbons. Find the probability that both events 𝐴 and 𝐵 occur. Which is the correct answer in simplest fraction form?

𝐸𝑣𝑒n𝑡 𝐴: 𝐿𝑖𝑙𝑎 𝑠𝑒𝑙𝑒𝑐𝑡𝑠 𝑎 𝑏𝑙𝑎𝑐𝑘 𝑟𝑖𝑏𝑏𝑜𝑛.

𝐸𝑣𝑒𝑛𝑡 𝐵: 𝐽𝑒𝑠𝑠ic𝑎 𝑠𝑒𝑙𝑒𝑐𝑡𝑠 𝑎 𝑔𝑟𝑒𝑒𝑛 𝑟𝑖𝑏𝑏𝑜𝑛.

4. The table shows the distribution of male and female students and left- and right-handed students in the math club. Find the probability that a female student selected at random is left-handed. Which is the correct answer as a fraction in simplest form?

|  |  |  |
| --- | --- | --- |
|  | Left-handed | Right-handed |
| Male | 2 | 35 |
| Female | 6 | 36 |

5. The table shows the distribution of the labor force in the United States in the year 2000. Suppose that a worker is selected at random. Find the probability of randomly selecting a worker in the Industry field given that the worker is female. Which is the correct answer as a decimal rounded to the nearest thousandth?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Agriculture | Industry | Services |
| Male | 3,132,000 | 25,056,000 | 50,112,000 |
| Female | 667,000 | 8,004,000 | 57,362,000 |

6. Events 𝐴 and 𝐵 are independent. Find the missing probability.

𝑃(𝐴) =\_\_\_\_\_\_\_

𝑃(𝐵) = 0.3  
𝑃(𝐴 𝑎𝑛𝑑 𝐵) = 0.06

7. If 𝑃(𝐴) = 0.43 and 𝑃(𝐵|𝐴) = 0.89, find 𝑃(𝐴 𝑎𝑛𝑑 𝐵).

8. The sections on a spinner are numbered from 1 through 8. If the probability of landing on a given section is the same for all the sections, what is the probability of spinning a number less than 4 or greater than 7 in a single spin?

9. A jar has 4 red marbles, 4 green marbles, and 5 blue marbles. If we choose a marble, then another marble without putting the first one back in the jar, what is the probability that the first marble will be blue and the second will be green?

10. Two urns contain white balls and yellow balls. The first urn contains 3 white balls and 6 yellow balls and the second urn contains 3 white balls and 8 yellow balls. A ball is drawn at random from each urn. What is the probability that both balls are white?

11. A pet store reported the following statistics:

55% of customers adopt a dog

40% of customers that adopt a dog adopt an adult dog

25% of customers adopt a different adult pet

Draw a tree diagram. How many customers adopt adult pets?