1. A die is loaded so that the number 6 comes up three times as often as any other number. What is the probability of rolling a 1 or a 6?

|  |  |
| --- | --- |
| A. |  |
| B. |  |
| C. |  |
| D. |  |
| E. |  |

 2. You play tennis regularly with a friend, and from past experience, you believe that the outcome of each match is independent. For any given match you have a probability of 0.6 of winning. The probability that you win the next two matches is

|  |  |
| --- | --- |
| A. | 0.16. |
| B. | 0.36. |
| C. | 0.4. |
| D. | 0.6. |
| E. | 1.2. |

 3. Experience has shown that a certain lie detector will show a positive reading (indicates a lie) 10% of the time when a person is telling the truth and 95% of the time when a person is lying. Suppose that a random sample of 5 suspects is subjected to a lie detector test regarding a recent one-person crime. Then the probability of observing no positive readings if all suspects plead innocent and are telling the truth is

|  |  |
| --- | --- |
| A. | 0.409. |
| B. | 0.735. |
| C. | 0.00001. |
| D. | 0.591. |
| E. | 0.99999 |

4. Six Republicans and Four Democrats have applied for two open positions on a planning committee. Since all the applicants are qualified to serve, the City Council decides to pick the two new members randomly. What is the probability that both come from the same party?

1. 66/90 B) 42/100 C) 52/100 D) 42/90 E) 52/90

5. A supermarket claims that their checkout scanners correctly price 99.8% of the items sold. How many items would you expect to buy, on average, to find one that scans incorrectly?

1. 500
2. 99.8
3. 2
4. 998
5. 200

6. At a school there are 100 students in the Senior Class and:

10 Students play Baseball, Basketball and Football

17 Students play Baseball and Football

21 Students play Baseball and Basketball

22 Students play Basketball and Football

31 Students play Baseball

36 Students play Football

40 Students play Basketball

* Draw a Venn diagram to represent this scenario, make sure to include students that do not play any sports.
* What is the probability that you randomly select one student and they do not play any of these sports?
* What is the probability of selecting one student at random that plays just Football?
* What is the probability that if you select two students they both play *exactly* two sports?