**Quiz 1.**

**Name:**

1. You are given:
   1. The probability that today is going to be sunny in the afternoon is 0.5.
   2. The probability that today is going to be sunny in the afternoon and rainy in evening is 0.3.
   3. The probability that today is going to be not sunny in the afternoon but will be rainy in the evening is 0.4.

What is the probability that we will have rains in the evening?

1. 0.7
2. 0.6
3. 0.2
4. None of the above.

**Answer:**

**Pr(Rainy\_Eve) = Pr(Rainy\_Eve, Sunny\_aft) + Pr(Rainy\_Eve, NOT(Sunny\_aft)) = 0.7.**

1. You are given a random variable x with the following possible values and their respective probabilities. What is the expectation of the square of this random variable?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **x** | -2 | -1 | 0 | 1 | 2 |
| **Pr(x)** | 0.2 | 0.1 | 0.4 | 0.1 | 0.2 |

1. 0
2. 2
3. 1.8
4. None of the above.

**Answer: \sum\_x {x^2 \* Pr(x)} = 4x0.2 + 1x0.1 + 0x0.4 + 1x0.1 + 4x0.2 = 1.8.**