**22 January 2020**

**1.0 Conditional probability:**

Event that effects another event:

**2.0 Independent events:**

In independent events:

Question in exam:

Are events A and B independent:

1. Find P(A)
2. Find P(B)
3. Find
4. See if P(A)\*P(B) = if yes then A and B are independent. Else, they are not independent

*Example Question 5 from Tutorial:*

a heart is always red

So, they are not independent



So, they are independent

*Example Question 6 from Tutorial:*

So, they are not independent

*Example Question 8 from Tutorial:*

*Example Question 7 from Tutorial:*

**05 January 2020:**

Continuous Random variables:

* **Probability density function PDF => f(x) (has small f):**

|  |  |
| --- | --- |
| Discrete | Continuous |
|  |  |
|  |  |
|  |  |

Example: For R.V. x with :

1. Find c

We know:

1. Find F(x):

SO,

1. P(x<=0.5)

You need to find the the CDF (F(x)):

1. P(|x|<1.5)

* **Cumulative distribution CDF => F(x) (has capital F)**
* **Joint PDF => f(x,y)**
* **Joint CDF => F(x,y)**
* **M-PDF => f(x) from f(x,y)**

**12 January 2020:**

**Expectation (mean) (average):**

* Discrete:
* Continuous:

**Variance:**

* + - Discrete:
    - Continuous:

*Tutorial 5 Question 3:*

We have discrete function so,

*Tutorial 5 Question 5:*