Nama : Syukrillah (22552011247)

Kelas : TIF RP 222PA

1. =

Kemungkinan munculnya jumlah 3:

- (1, 2)

- (2, 1)

Kemungkinan munculnya jumlah 8:

- (2, 6)

- (3, 5)

- (4, 4)

- (5, 3)

- (6, 2)

* Probabilitas muncul jumlah 3 atau 8 = (Jumlah kemungkinan yang sukses) / (Jumlah kemungkinan total) = (2 + 7) / 36 = 9 / 36 = 1/4.
* Rata-rata (μ) dari hasil lemparan dadu tunggal:

μ = (1 + 2 + 3 + 4 + 5 + 6) / 6 = 21 / 6 = 3.5.

* varians (σ^2):

σ^2 = [(1 - 3.5)^2 + (2 - 3.5)^2 + (3 - 3.5)^2 + (4 - 3.5)^2 + (5 - 3.5)^2 + (6 - 3.5)^2] / 6

σ^2 = [(2.25 + 2.25 + 0.25 + 0.25 + 2.25 + 2.25)] / 6

σ^2 = 9 / 6 = 1.5.

1. =

a. b(4; 8, 80%):

- n jumlah percobaan (8).

- p probabilitas (80% atau 0.8).

- q probabilitas (q = 1 - p).

(b(4; 8, 80%)) = C(8, 4) \* (0.8)^4 \* (0.2)^(8-4)

(b(4; 8, 80%)) = 70 \* (0.8)^4 \* (0.2)^4 = 0.4096 atau 40.96%.

b. b(2; 5, 50%):

- n jumlah percobaan (5).

- p probabilitas sukses (50% atau 0.5).

- q probabilitas kegagalan (q = 1 - p).

(b(2; 5, 50%)) = C(5, 2) \* (0.5)^2 \* (0.5)^(5-2)

(b(2; 5, 50%)) = 10 \* (0.5)^2 \* (0.5)^3 = 0.3125 atau 31.25%.

c. b(3; 4, 50%):

- n jumlah percobaan(4).

- p probabilitas sukses (50% atau 0.5).

- q probabilitas kegagalan (q = 1 - p).

(b(3; 4, 50%)) = C(4, 3) \* (0.5)^3 \* (0.5)^(4-3)

(b(3; 4, 50%)) = 4 \* (0.5)^3 \* (0.5)^1 = 0.25 atau 25%.

1. =
2. =

p(x; λt) = (e^(-λt) \* (λt)^x) / x!

a. p(x; λt) = p(3; 0.8)

- x jumlah kejadian (3).

- λ laju rata-rata kejadian per satuan waktu (0.8).

p(3; 0.8) = (e^(-0.8) \* (0.8)^3) / 3!

p(3; 0.8) = (e^(-0.8) \* (0.8)^3) / 6 ≈ (0.44933 \* 0.512) / 6 ≈ 0.03825

b. p(x; λt) = p(9; 4.0)

- x jumlah kejadian (9).

- λ laju rata-rata kejadian per satuan waktu (4.0).

p(9; 4.0) = (e^(-4.0) \* (4.0)^9) / 9!

p(9; 4.0) = (e^(-4.0) \* (4.0)^9) / 362,880 ≈ (0.01832 \* 262,144) / 362,880 ≈ 0.01322

c. p(x; λt) = p(16; 13)

- x jumlah kejadian (16).

- λ laju rata-rata kejadian per satuan waktu (13).

p(16; 13) = (e^(-13) \* (13)^16) / 16!

p(16; 13) = (e^(-13) \* (13)^16) / 20922789888000

≈ 0

1. =

p(x; λ) = (e^(-λ) \* λ^x) / x!.

p(0; 8) = (e^(-8) \* 8^0) / 0!

p(0; 8) = (e^(-8) \* 1) / 1 = e^(-8)

p(0; 8) ≈ 2.71828^(-8) ≈ 0.00033546263 => sekitar 0.03354%

1. =
2. =

- N = 5 orang.

- K = (3 orang).

- n = (juga 5 orang).

- k ?

P(X = k) = (K choose k) \* [(N - K) choose (n - k)] / (N choose n)

1. P(X = 0):

P(X = 0) = (0 choose 0) \* [(3 - 0) choose (5 - 0)] / (5 choose 5) = 1 \* (3 choose 5) / 1 = 0

2. P(X = 1):

P(X = 1) = (3 choose 1) \* [(3 - 1) choose (5 - 1)] / (5 choose 5) = 3 \* 6 / 1 = 18.

3. P(X = 2):

P(X = 2) = (3 choose 2) \* [(3 - 2) choose (5 - 2)] / (5 choose 5) = 3 \* 3 / 1 = 9.

4. P(X = 3):

P(X = 3) = (3 choose 3) \* [(3 - 3) choose (5 - 3)] / (5 choose 5) = 1 \* 1 / 1 = 1.