

No. _____

Date . . .

1. Distribusi normal merupakan sebuah fungsi probabilitas yang menunjukkan distribusi atau penyebaran suatu variabel. Contoh: fakta alam yang terdistribusi normal banyak di tempatkan dalam berbagai perhitungan statistika dan per modelan yang berguna.

$$2. \text{Sebuah } P(3 \text{ lulus uji}) = P(k_1 \text{ dan } k_2 \text{ dan } k_3) \\ = 0,95 \cdot 0,95 \cdot 0,95 = 0,86$$

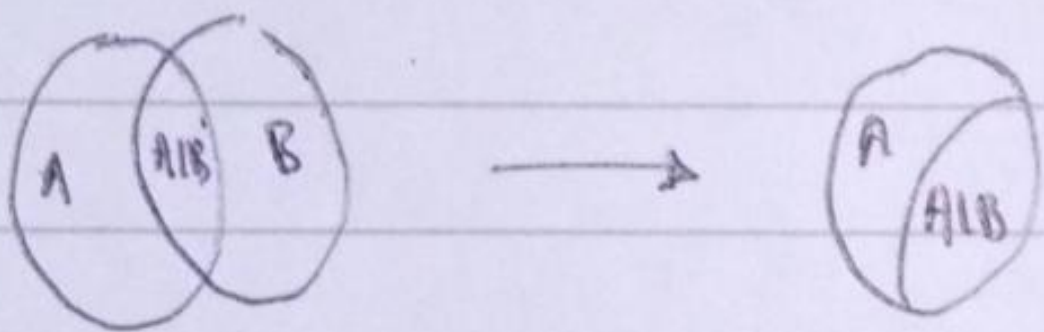
$$Q. P(2 \text{ lulus uji}) = P(k_1 \text{ dan } k_2 \text{ dan } k_3) + P(k_1 \text{ dan } k_2 \text{ dan } k_3') + P(k_1 \text{ dan } k_2' \text{ dan } k_3)$$

$$= (0,95 \cdot 0,95 \cdot 0,95) + (0,05 \cdot 0,95 \cdot 0,95) + (0,05 \cdot 0,95 \cdot 0,95) = 0,14$$

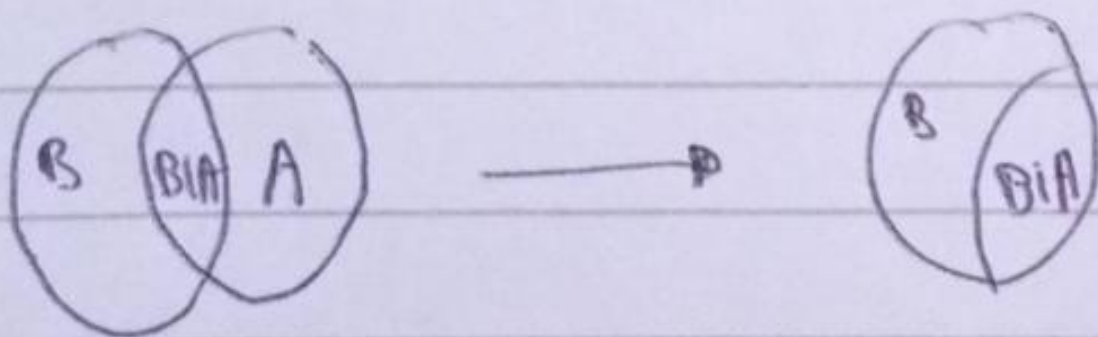
$$\leq P(\text{tidak ada yang lulus uji}) = P(k_1' \text{ dan } k_2' \text{ dan } k_3')$$

$$= 0,05 \cdot 0,05 \cdot 0,05 = 0,000125$$

= di simbolkan $Pr(A|B)$ atau $Pr(B|A)$ kejadian tak bebas (bersarat) dapat di lihat melalui diagram ven berikut :



diatas diagram yang menyatakan "probabilitas B dengan syarat A telah terjadi. Perhatikan A dengan syarat B telah terjadi



$$3. N = 500$$

$$N_0 = N = 165$$

$$0 : 12$$

$$n = 36$$

$$\frac{n}{N} = \frac{36}{500} = 0,072 = 7,2\% > 5\% \quad = \frac{160 - 165}{1928} = -2,59$$

$$P(\bar{x} < 160) = P(Z < ?)$$

$$f_k = \sqrt{\frac{n-n_0}{n-1}} = \sqrt{\frac{500-36}{500-1}} = \sqrt{\frac{464}{499}} = \sqrt{0,929} = 0,964$$

$$\bar{x} \pm \frac{s}{\sqrt{n}} \times f_k = 12 \times 0,964 = 2 \times 0,964 = 1,928$$

$$P(\bar{x} < 160) P(Z < -2,59) = 0,5 - 0,4952 =$$

$$0,0048$$

4. (A)

25	40
27	50
30	45
28	42

$$\Sigma y = 105 \quad \Sigma x = 177$$

$$dix : a : 5\% = 0,05$$

$$b : 5\% = 0,05$$

$$B. \frac{b \cdot n \Sigma xy - \Sigma x \Sigma y}{\Sigma x^2 - (\Sigma x)^2} = \frac{4(4666) - (105)(177)}{4(2781) - (11023)}$$

$$= \frac{18664 - 18585}{1132 - 11025} = \frac{79}{107} = 0,73$$

$$a. \frac{\Sigma y - b \Sigma x}{n}$$

$$= \frac{105 - 0,73(177)}{4} = \frac{105 - 129,69}{4} = \frac{-24,69}{4} = -6,17$$

$$(B) r = \frac{n \Sigma xy - \Sigma x \Sigma y}{\sqrt{[n(\Sigma x^2) - (\Sigma x)^2][n(\Sigma y^2) - (\Sigma y)^2]}}$$

$$= \frac{4(4666) - (105)(177)}{\sqrt{[4(2781) - (11023)][4(7875) - 31329]}}$$

$$= \frac{18664 - 18585}{\sqrt{[4(2781) - (11023)][4(7875) - 31329]}} = \frac{79}{\sqrt{134 \cdot 134}} = \frac{79}{134} = 0,589$$

$$[107]^{1/2} (107)^{1/2} \sqrt{134}$$

$$\text{koefisien determinasi } r^2 = 0,589^2 = 34,66\%$$

$$(C) \text{ standar estimasi}$$

$$se = \sqrt{\frac{(\Sigma y^2 - a \Sigma y - b \Sigma xy)}{n-2}}$$

$$= \sqrt{\frac{53,66}{2}} \sqrt{\frac{16,83}{4}}$$

$$= \sqrt{\frac{7873 - (25,08)(177) - (10,75)(4666)}{4-2}}$$

$$= \sqrt{\frac{7873 - (4439,16) - 4986,18}{2}}$$

$$\textcircled{d} H_0: B = 0,105$$

$$H_{A1}: X < 0,105$$

= uji hipotesis 2 arah

- tingkat signifikan

$$\alpha = 0,05/2 = 0,025$$

- wilayah kritis

$$D_b = n - 2 - 4 - 2 = 2$$

$$t = (0,023/2) = \pm 4,303$$

nilai hitung

$$s_b = s_e$$

$$\sqrt{\frac{\sum x^2 (\sum x)^2}{n}}$$

$$= \frac{4 \cdot 10^2}{\sqrt{2783 (\frac{105}{4})^2}}$$

$$= \frac{4 \cdot 10^2}{\sqrt{2783 - \frac{11035}{4}}}$$

$$= \frac{4 \cdot 10^2}{\sqrt{2783 - 2256,78}}$$

$$= \frac{4 \cdot 10^2}{\sqrt{27}} = \frac{4 \cdot 10^2}{5,13} = 0,75$$

$$t = \frac{B - B_0}{s_b}$$

$$= \frac{0,73 - 0,105}{0,75} = 0,85$$

$$0,85 < 4,303$$

$$\textcircled{e} n = 15\% \times 6 : p = \frac{2}{5} \cdot \frac{1}{4} = \frac{3}{3}$$

$$P = \binom{n}{x} = \frac{n!}{(n-x)! x!} \cdot p^x \cdot q^{n-x}$$

$$P = \binom{6 \cdot 15}{6} = \frac{15!}{(15-6)! 6!} \cdot \left(\frac{2}{5}\right)^6 \cdot \left(\frac{3}{5}\right)^9 = 0,207$$