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| | مجزأة | | | | | | | | | | | | |
|--------------|-----------------|--|-----------------|----------------|---|---|---|--------------|-----------------|-----------------|-----------------|----------------|--|
| 04 | | $n \quad u_1 = 1$ $v_n = u_n + 3 \quad u_{n+1} = 2u_n + 3$ $(v_n) \quad v_{n+1} = u_{n+1} + 3 = 2u_n + 6 = 2v_n \quad (1)$ $\cdot v_1 = 4 \quad q = 2$ $\cdot v_n = 4 \times 2^{n-1} = 2^{n+1} : n \quad v_n$ $u_n = v_n - 3 = 2^{n+1} - 3 : n \quad u_n$ $\cdot S_n = u_1 + u_2 + \dots + u_n = (v_1 + v_2 + \dots + v_n) - 3n \quad (2)$ $= 4(2^n - 1) - 3n$ $\cdot n = 3 \quad 4(2^3 - 1) - 3n = 28 - 3n \quad S_n = 28 - 3n$ | | | | | | | | | | | |
| 04 | | $C_{12}^2 = 66 : \quad (1)$ $\cdot P(A) = \frac{C_3^2 + C_4^2 + C_5^2}{C_{12}^2} = \frac{3 + 6 + 10}{66} = \frac{19}{66} \quad ($ $P(B) = 1 - \frac{C_7^2}{C_{12}^2} = \frac{21}{66} = \frac{7}{22}$ $P(A \cap B) = \frac{C_5^2}{C_{12}^2} = \frac{10}{66} = \frac{5}{33}$ $\cdot \quad B \quad A \quad P(A \cap B) \neq P(A) \times P(B) \quad ($ $X(\Omega) = \{2; 3; 4; 4; 5\} : \quad X \quad (2$ $\cdot X$ <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">x_i</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">4</td> <td style="padding: 5px;">5</td> </tr> <tr> <td style="padding: 5px;">$P(X = x_i)$</td> <td style="padding: 5px;">$\frac{10}{66}$</td> <td style="padding: 5px;">$\frac{30}{66}$</td> <td style="padding: 5px;">$\frac{20}{66}$</td> <td style="padding: 5px;">$\frac{6}{66}$</td> </tr> </table> $\cdot E(X) = \frac{20 + 90 + 80 + 30}{66} = \frac{220}{66} \approx 3,33 \quad ($ | x_i | 2 | 3 | 4 | 5 | $P(X = x_i)$ | $\frac{10}{66}$ | $\frac{30}{66}$ | $\frac{20}{66}$ | $\frac{6}{66}$ | |
| x_i | 2 | 3 | 4 | 5 | | | | | | | | | |
| $P(X = x_i)$ | $\frac{10}{66}$ | $\frac{30}{66}$ | $\frac{20}{66}$ | $\frac{6}{66}$ | | | | | | | | | |

0.25

$$z_B = 5\sqrt{2}e^{-\frac{7\pi}{12}i} \text{ و } z_A = 5 - 5i \quad (1)$$

: A (

0.5

$$z_A = 5\sqrt{2}e^{-\frac{\pi}{4}i} : z_A \quad ($$

$$: M'(z') \quad M(z) \quad T \quad (2)$$

$$. z' = e^{-i\frac{\pi}{3}} z$$

0.5

$$-\frac{\pi}{3} \quad O \quad : T \quad ($$

0.5

$$T(A) = e^{-i\frac{\pi}{3}} z_A = z_B = e^{-i\frac{\pi}{3}} \times 5\sqrt{2}e^{-\frac{\pi}{4}i} = 5\sqrt{2}e^{-\frac{7\pi}{12}i} = z_B \quad ($$

0.25

$$. T(A) = B$$

: B (

0.5

$$e^{-i\frac{\pi}{3}} = \frac{1}{2} - \frac{\sqrt{3}}{2}i : e^{-i\frac{\pi}{3}} \quad (3)$$

0.5

: z_B (

$$z_B = \left(\frac{1}{2} - \frac{\sqrt{3}}{2}i\right)(5 - 5i) = \left(\frac{5 - 5\sqrt{3}}{2}\right) - \left(\frac{5 + 5\sqrt{3}}{2}\right)i$$

0.5

$$: \sin\left(-\frac{7\pi}{12}\right) \quad \cos\left(-\frac{7\pi}{12}\right) : \quad ($$

$$. \cos\left(-\frac{7\pi}{12}\right) = \frac{5 - 5\sqrt{3}}{2 \times 5\sqrt{2}} = \frac{\sqrt{2} - \sqrt{6}}{4}$$

0.5

$$\sin\left(-\frac{7\pi}{12}\right) = \frac{-5 - 5\sqrt{3}}{2 \times 5\sqrt{2}} = -\left(\frac{\sqrt{2} + \sqrt{6}}{4}\right)$$



