≠ Soruların Çözümü ≠

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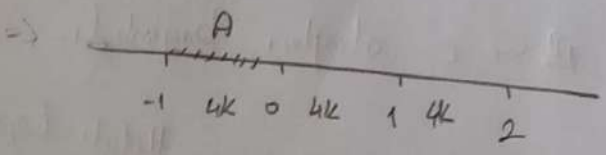
1)

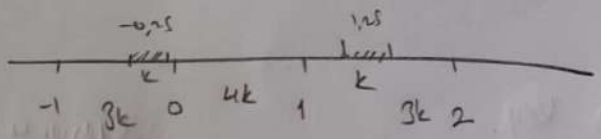
$A = A = \{x < 0\} = (-1, 0)$



$\Rightarrow \frac{4k}{12k} = \frac{1}{3}$ //

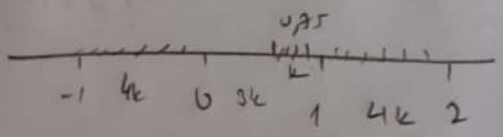
$B = |x - 0,5| < 0,75$

$-0,25 < x < 1,25$



$\Rightarrow \frac{6k}{12k} = \frac{1}{2}$ //

$C = \{x > 0,75\} = (0,75, 2)$

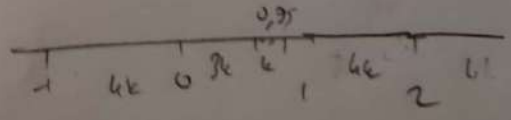


$\Rightarrow \frac{5k}{12k} = \frac{5}{12}$

D = $\frac{4k}{12k}$ 'dan $\frac{1}{3}$'tür. $\Rightarrow$ $-0,25 < x < 0$ aralığında olacaktır.

$\frac{1}{3} \cdot \frac{1}{12} = \frac{1}{36}$

E =



$\frac{5k}{8k} = \frac{5}{8}$ //

$\frac{1}{12} = \frac{1}{6}$

F = $P(AB) = P(A) \cdot P(B)$ (A ve B olayları bağımsız.) $\Rightarrow$ Eşitlik sağlanıyorsa

$-0,25 < x < 0$

$\frac{k}{12k} \neq \frac{1}{3} \cdot \frac{1}{2}$ (Eşit olmadığı için A ve B olayları bağımlıdır.)

$P(B \cap C) = P(B) \cdot P(C)$

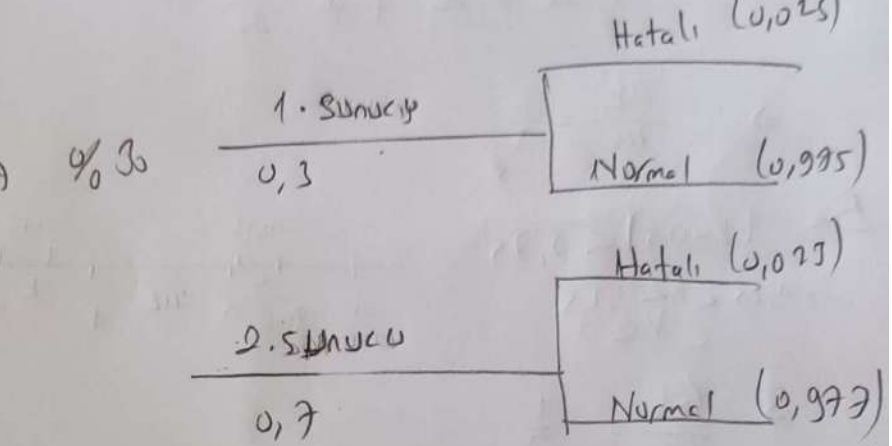
Eşitlik varsa olaylar bağımsız

$0,75 < x < 1,25$

$\frac{2x}{12} = \frac{1}{2} \cdot \frac{5}{12}$

$\frac{1}{6} \neq \frac{5}{24}$ o zaman B ve C olayları bağımlıdır.

2)



a)

1 den Hatasız veya

2. de Hatasız

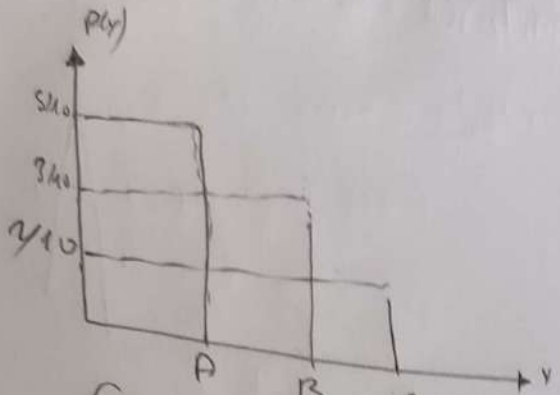
$(0,3 \times 0,975) + (0,7 \times 0,977) = 0,9764$

b) $\frac{0,3 \times 0,025}{0,3 \times 0,025 + 0,7 \times 0,023} = \frac{0,0075}{0,0075 + 0,0161} = \frac{0,0075}{0,0236} = \frac{75}{236}$

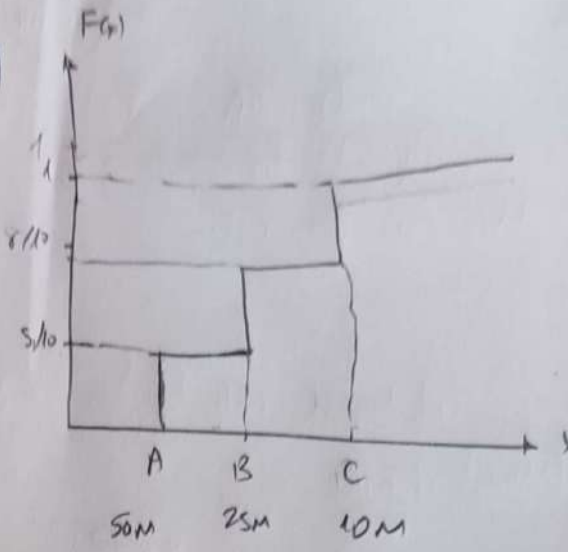
Matematik yolundan gidildi

3)

a)



b)



c) $E(x) = 50M \frac{5}{10} + 25M \cdot \frac{3}{10} + 10M \cdot \frac{2}{10} = 34,5M \Rightarrow 34,5000.000 TL$

d) $E[2x+3] = 2[x]+3 = 2(34,5M)+3 = 69M+3$

$= 69.000.003 TL$

e) $Var(x) = E[x^2] - E[x]^2$

$E[x^2] = (5.10^3)^2 \cdot \frac{5}{10} + (25.10^6)^2 \cdot \frac{3}{10} + (10.10^6)^2 \cdot \frac{2}{10}$

$= 125.10^3 + 1875.10^{11} + 200.10^{11}$

$= 10^{11}(14575)$

$E[x]^2 = (34,5.10^5)^2 = 1.190.25.10^{11}$

$Var(x) = E[x^2] - E[x]^2 = 14575.10^{11} - 119.025$

$= 2672,5.10^{11}$

f)

$Var(2x+3) = 2^2 Var(x)$

$Var(2x+3) = 4 Var x$

$4 Var(x) = 4.(2672,5.10^{11}) = 10690.10^{11}$