Q3: Salution:
P(0 X,+ (1-0) X2 < x) = P(X, < x 0 = 1) P(0 = 1) + P(X2 < x 0 = 0) P(0 = 0) = P. P(X < x 0 = 1) + (1-P) P(X2 < x 0 = 0)
$\frac{P(\theta \times (1-\theta) \times (2\times x) = P(\times (2\times x) = 1) P(\theta=1) + P(\times (2\times x) = 0) P(\theta=0) + P(\times (2\times x) = 0)}{X_1, X_2 \text{ are independent of } P(\times (2\times x) = 0) P(X_2 \leq x)}$
$P(\Theta X_1 + (1-\Theta) X_2 = X) = \frac{d[P(\Theta X_1 + (1-\Theta) X_2 \leq X)]}{dX} = \frac{d[PP(X_1 \leq X_1) + (1-P)P(X_2 \leq X_2)]}{dX} + \frac{dP(X_2 \leq X_2)}{dX}$ $= P[(X_1 = X_1) + (1-P)P(X_2 = X_2)] = \frac{d[PP(X_1 \leq X_2) + (1-P)P(X_2 \leq X_2)]}{dX} + \frac{dP(X_2 \leq X_2)}{dX}$ helause $X_1 = X_1 + (1-P)P(X_2 \leq X_2)$
$= D D(\sqrt{-x}) + UDD D/\sqrt{-1} \sqrt{x}$
- 1 / () - () - (x-M2) - (x-
hornuse 12/1/1/1/2/ 1/1/1/22
$(1 - 10 \cdot 1 + 10 \cdot 1)$ $(1 - 10 \cdot 1)$ $(1 - 10 \cdot 1)$ $(1 - 10 \cdot 1)$