50

4.1-1

- (a) $\sum \int (x_1, y_1) = c \left((1+2.17 + (1+2.2) + (1+2.3) + (2+2.17 + (2+2.2) + (2+2.3) \right)$ $= c \cdot \lambda \lambda = 1 \rightarrow c = \frac{1}{3\lambda}$
- (b) $\sum \int f(x,y) = c \{ (1+1) + (2+1) + (2+2) + (3+1) + (3+2) + (3+3) \} = c \cdot 24 = 1$ $\Rightarrow c = \frac{1}{24}$
- (い b = オ+y = 8 , 0 = y = ち そのでなかたカーリなけれ (オ・y) 의 なかれ みx b=18 7H

 : エエ f(オ,y) = 18 c = 1 → c = 1/8 レ
 (オリア) (
- (d) $\sum \sum f(x,y) = c \left(\frac{1}{4} \frac{\infty}{y_{-1}} \left(\frac{1}{3} \right)^y + \left(\frac{1}{4} \right)^x \frac{\infty}{y_{-1}} \left(\frac{1}{3} \right)^y + \cdots \right) = c \left(\frac{1}{4} \cdot \frac{1}{1 \frac{1}{3}} + \left(\frac{1}{4} \right)^2 \cdot \frac{\frac{1}{2}}{1 \frac{1}{3}} + \cdots \right)$ $\frac{1}{1 \frac{1}{3}} \cdot \frac{1}{1 \frac{1}{4}} \xrightarrow{1 \frac{1}{4}} \xrightarrow{1 + \frac{1}{4}} \xrightarrow{1 -$

4.1-5

 $(a) + (a, b) = b(x=x, A=b) = \frac{12.6}{4.6} \frac{(2.6)^{2}}{(2.6)^{2}} \left(\frac{1}{10}\right)^{2} \left(\frac{1}{10}\right)^{12-2}$

$$(c) P(X=10,Y=4) = \frac{15!}{10!4!1!} \left(\frac{6}{10}\right)^{10} \left(\frac{3}{10}\right)^{4} \left(\frac{1}{10}\right)^{1} = 0.07354$$

$$= \frac{x! (15-x)!}{x! (15-x)!} \left(\frac{10}{6}\right)^{x} \cdot \frac{y=0}{15-x} \frac{y! (15-x)!}{(15-x)!} \left(\frac{3}{2}\right)^{x} \left(\frac{10}{10}\right)^{15-x-x}$$

$$= \frac{15!}{4! (15-47)!} \left(\frac{6}{10}\right)^{1/2} \cdot \left(1 - \frac{6}{10}\right)^{1/2-1/2} \rightarrow 1/2 \cdot 10^{-1/2}$$

(e)
$$P(X \leq |I|) = \frac{|I|}{4=0} {\binom{15}{7}} 0.6^{\frac{7}{3}} 0.4^{\frac{15-7}{3}} = 0.90950$$

# 4.2-3	$K(\alpha,b) = E[(Y-\alpha-bX)^2] = E[Y^2-(\alpha+bX)Y+(\alpha+bX)^2] : \rho = \frac{Cov(X,Y)}{\sigma_X\sigma_Y} = \frac{E(XY)-\mu_X}{\sigma_X\sigma_Y}$						
	$= E(Y^2) - E[(\alpha+bx)Y] + E(\alpha^2+2\alpha bx+b^2x^2)$						
10	$= E(Y^{2}) - \alpha E(Y) + b E(XY) + \alpha^{2} + 2\alpha b E(X) + b^{2} E(X^{2})$						
-10	$= \sigma_{\lambda} + \mu_{\lambda} - \sigma_{\lambda} + \rho(\mu \kappa \mu \lambda + b \alpha \kappa \lambda) + \sigma_{\lambda} + \sigma_{\lambda} + \rho_{\lambda} (\alpha \kappa + \beta \kappa)$						
	$O\left(\frac{9\sigma}{3K}\right) = 0$						
# 4.2-4	(a) f(1,y) = 4, (1,y) = (0,0), (1,1), (1,-1), (2,0)						
# 1.4-4							
	국간에 '지사가남성 '용간성이 아니으로 X와Y는 독생이 아니다.						
	$ \frac{1}{1} \begin{array}{c ccccccccccccccccccccccccccccccccccc$						
	-1 0 4 0 4 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\						
	$\frac{0 \pm 0 \pm \frac{1}{2}}{1 + 0 \pm \frac{1}{2}} = \frac{1}{1 + 1} = \frac{1}$						
	$\frac{3}{1} + \frac{4}{0} + \frac{4}{4} + \frac{2}{4} + \frac{1}{1} = \frac{1}{165x} f(x,y) = \frac{1}{165x} f(x,y) = \frac{1}{165x} f(x,y) \text{ when } y = -1, 1$ $\frac{1}{16x} f(x,y) \text{ when } y = 0, x \neq 1$						
	f(1,17 ≠ fx(17.fx(1) 0102 xety5 5201 ohut.						
	4 4						
	(b) COV(K.Y) = \(\frac{1}{2}\) \(\frac{1}\) \(\frac{1}{2}\) \(\frac{1}\) \(\frac{1}\) \(\frac{1}\) \(\frac{1}\						
	$P = \frac{\text{Cov}(K \setminus Y)}{\text{GX GY}} \text{ GIM $2 \text{N-1} + 0 \ 0 \ 0 \ 2} P = 0 V$						
	<u>ક્ષ્મુક્તિ ત્યાપ્ટ ક્ષમુળ ર</u>						
	$E(X') = \frac{2}{3} \frac{1}{3} + \chi(1) = 0 \cdot \frac{1}{4} + 1 \cdot \frac{1}{2} + 2 \cdot \frac{1}{4} = \frac{3}{2} \rightarrow Vorr(X) = E(X') - E(X)' = \frac{1}{2} - 1^2 = \frac{1}{2}$ $E(X') = \frac{2}{3} \frac{1}{3} + \chi(1) = 0^2 \cdot \frac{1}{4} + 1^2 \cdot \frac{1}{2} + 2^2 \cdot \frac{1}{4} = \frac{3}{2} \rightarrow Vorr(X) = E(X') - E(X)' = \frac{3}{2} - 1^2 = \frac{1}{2}$						
	$E(X) = \frac{1}{\sqrt{3}} $						
	$E(Y) = \frac{1}{3} yf_{Y}(y) = -1 \cdot \frac{1}{4} + 0 \cdot \frac{1}{2} + 1 \cdot \frac{1}{4} = 0$ $E(Y^{2}) = \frac{1}{3} y^{2} f_{Y}(y) = (-1)^{2} \cdot \frac{1}{4} + 0^{2} \cdot \frac{1}{2} + 1^{2} \cdot \frac{1}{4} = \frac{1}{2}$ $Vow (Y) = E(Y^{2}) - E(Y)^{2} = \frac{1}{2} - 0^{2} = \frac{1}{2}$						
	$\Rightarrow P = \frac{\text{Cov}(X_1Y_1)}{\sigma_X \sigma_Y} = \frac{0}{\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} = 0}$						
	12 12						

$$f_{X}(x) = \frac{1}{365}f_{X}(x) = \frac{1}{36}\frac{1}{12}\frac{1}{12} = \frac{4410}{32}$$

$$f_{Y}(y) = \frac{1}{365}f_{X}(x) = \frac{1}{36}\frac{1}{12}\frac{1}{12} = \frac{1}{32}\frac{1}{12}$$

$$f_{Y}(y) = \frac{1}{365}f_{X}(x) = \frac{1}{36}\frac{1}{12}\frac{1}{12} = \frac{1}{32}\frac{1}{12}$$

$$\frac{1}{32}\frac{1}{12} = \frac{1}{32}\frac{1}{12}$$

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$$\frac{1}{32}\frac{1}{12}\frac{1}{12}\frac{1}{12}\frac{1}{12} = \frac{1}{12}$$

$$\frac{1}{32}\frac{1}{12}\frac{1}$$

$f_{X}(x) = \int_{0}^{\infty} f(r_{1}x) dr_{2} = \int_{0}^{\infty} 2e^{-\frac{x}{2}x} dr_{2} = 2e^{-\frac{x}{2}x}, occion$ $f_{Y}(y) = \int_{0}^{\infty} f(r_{1}x) dr_{2} = \int_{0}^{\infty} 2e^{-\frac{x}{2}x} dr_{2} = 2e^{-\frac{x}{2}x} (e^{\frac{x}{2}}-1), occion$ $f_{Y}(y) = \int_{0}^{\infty} f(r_{1}x) dr_{2} = 2x, occion$ $f_{Y}(y) = \int_{0}^{\infty} f(r_{1}x) dr_{2} = 2x, occion$ $f_{Y}(y) = \int_{0}^{1} f(r_{1}$	# 4.4-2	f(1,1y) = 2e-x-y, 0=1=y=10 MH					
		fx(1) = \(\frac{1}{2} \) f(1, y) dy = \(\frac{1}{2} \) 2e^{-\frac{1}{2}} dy = \(\frac{1}{2} \) \(\frac{1}{2} \)					
$\begin{array}{llllllllllllllllllllllllllllllllllll$							
# 4.4-7 (A) $f(x_1, y_1) = 2$, $0 \le y \le x \le 1$ or $(x_1, y_1) = x_2$, $0 \le x \le 1$ $f(y_1) = \int_0^x f(x_1, y_1) dy_2 = \frac{1}{2}$, $0 \le x \le 1$ (b) $f(x_1) = \int_0^x f(x_1, y_1) dy_2 = \frac{1}{2}$ $f(x_1) = \int_0^x f(x_1, y_1) dy_2 = \frac{1}{2}$ $f(x_1) = \int_0^x f(x_1, y_2) dy_3 dx_2 = \int_0^x f(x_1, y_2) dx_3 = \frac{1}{4}$ $f(x_1) = \int_0^x f(x_1, y_2) dy_3 dx_2 = \int_0^x f(x_1, y_2) dx_3 = \frac{1}{4}$ $f(x_1) = \int_0^x f(x_1, y_2) dx_3 dx_3 = \frac{1}{4}$ $f(x_1) = \int_0^x f(x_1, y_2) dx_3 dx_3 = \frac{1}{4}$ $f(x_1) = \int_0^x f(x_1, y_2) dx_3 dx_3 = \frac{1}{4}$ $f(x_1) = \int_0^x f(x_1, y_2) dx_3 dx_3 = \frac{1}{4}$ $f(x_1) = \int_0^x f(x_1, y_2) dx_3 dx_3 = \frac{1}{4}$ $f(x_1) = \int_0^x f(x_1, y_2) dx_3 dx_3 = \int_0^x f(x_1, y_2) dx_3 dx_3 dx_3 dx_3 dx_3 dx_3 dx_3 dx_3$							
$f_{K}(a) = \int_{0}^{A} f_{K}(a,y) day = 2a, 0 \leq a \leq 1$ $f_{V}(y) = \int_{0}^{A} f_{K}(a,y) day = 2(1-y), 0 \leq y \leq 1$ $(b) \ E(x) = \int_{0}^{A} x \cdot 2x dx = \frac{1}{3}$ $E(x) = \int_{0}^{A} x^{2} \cdot 2x dx = \frac{1}{2} \Rightarrow Von(x) = E(x^{2}) - E(x)^{2} = \frac{1}{2} - \left(\frac{1}{3}\right)^{2} = \frac{1}{13} V$ $E(x) = \int_{0}^{A} x^{2} \cdot 2x dx = \frac{1}{2} \Rightarrow Von(x) = E(x^{2}) - E(x)^{2} = \frac{1}{2} - \left(\frac{1}{3}\right)^{2} = \frac{1}{13} V$ $E(x) = \int_{0}^{A} x^{2} \cdot 2x dx = \frac{1}{3} \Rightarrow Von(x) = E(x)^{2} - E(x)^{2} = \frac{1}{4} - \left(\frac{1}{3}\right)^{2} = \frac{1}{4} V$ $E(x) = \int_{0}^{A} \int_{0}^{A} x^{2} \cdot 2x dx = \int_{0}^{A} x^{2} dx = \frac{1}{4} \Rightarrow Von(x) = E(x)^{2} - E(x)^{2} = \frac{1}{4} V$ $E(x) = \int_{0}^{A} \int_{0}^{A} x^{2} \cdot 2x dx = \int_{0}^{A} x^{2} dx = \frac{1}{4} \Rightarrow Von(x) = $	<i></i>						
$f_{V}(y) = \int_{0}^{1} f_{V}(x_{1}) dx_{2} = \frac{1}{3}$ $(b) \ E(x) = \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{3}$ $E(x) = \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{2}$ $E(y) = \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{2}$ $E(y) = \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{3}$ $E(y) = \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{3}$ $E(y) = \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{3}$ $E(y) = \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{3}$ $E(y) = \int_{0}^{1} \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{3}$ $E(y) = \int_{0}^{1} \int_{0}^{1} x^{2} \cdot 2x dx_{3} = \frac{1}{3}$ $Cov(x, y) = E(y) \cdot E(x) \cdot E(y) = \frac{1}{4} - \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{4}$ $Cov(x, y) = \frac{1}{\sqrt{16} \sqrt{16}} = \frac{1}{4}$ $Cov(x, y) = \frac{1}{\sqrt{16} \sqrt{16}} = \frac{1}{4}$ $E(x) = \frac{1}{16$	# 4.4-7						
(b) $E(x) = \int_{0}^{1} A \cdot 2A dA = \frac{1}{3}$ $E(x^{2}) = \int_{0}^{1} A^{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} A^{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} A^{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} A^{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} A^{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{1} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{1} \int_{0}^{1} A_{2} \cdot 2A dA = \frac{1}{2}$ $E(x^{2}) = \int_{0}^{$							
$E(Y) = \int_{0}^{1} y \cdot 2(1-y) dy = \frac{1}{3}$ $E(Y)^{2} = \int_{0}^{1} y^{2} \cdot 2(1-y) dy = \frac{1}{4}$ $E(Y)^{2} = \int_{0}^{1} \int_{0}^{3} + yy \cdot 2 \cdot 1 dy dx = \int_{0}^{1} x^{3} dx = \frac{1}{4}$ $\therefore Cou(x, Y) = E(xY) - E(x)E(Y) = \frac{1}{4} - \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{4}$ $\therefore Cou(x, Y) = \frac{Cov(x, Y)}{\sqrt{Vor(X)}\sqrt{Vor(Y)}} = \frac{\frac{1}{36}}{\sqrt{\frac{1}{16}\sqrt{\frac{1}{3}}}} = \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $= e \left[(Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} \right]$ $= e \left[(Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} \right]$ $= c \int_{0}^{1} (Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} = 0$ $= \frac{3}{2} \ln_{2} (Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} = 0$ $= c \int_{0}^{1} x \int_{0}^{1} \frac{1}{2} \int_{0}^$							
$E(Y) = \int_{0}^{1} y \cdot 2(1-y) dy = \frac{1}{3}$ $E(Y)^{2} = \int_{0}^{1} y^{2} \cdot 2(1-y) dy = \frac{1}{4}$ $E(Y)^{2} = \int_{0}^{1} \int_{0}^{3} + yy \cdot 2 \cdot 1 dy dx = \int_{0}^{1} x^{3} dx = \frac{1}{4}$ $\therefore Cou(x, Y) = E(xY) - E(x)E(Y) = \frac{1}{4} - \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{4}$ $\therefore Cou(x, Y) = \frac{Cov(x, Y)}{\sqrt{Vor(X)}\sqrt{Vor(Y)}} = \frac{\frac{1}{36}}{\sqrt{\frac{1}{16}\sqrt{\frac{1}{3}}}} = \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} \ln_{2} \frac{1}{2} \ln_{2} \frac{1}{4}$ $= e \left[(Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} \right]$ $= e \left[(Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} \right]$ $= c \int_{0}^{1} (Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} = 0$ $= \frac{3}{2} \ln_{2} (Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2} = 0$ $= c \int_{0}^{1} x \int_{0}^{1} \frac{1}{2} \int_{0}^$		(b) $\pm (x) = \int_0^1 x \cdot 2x dx = \frac{2}{3}$					
$E(XY) = \int_{0}^{1} \int_{0}^{1} Ay_{1} \cdot \lambda dy dx = \int_{0}^{1} \int_{0}^{1} dx = \frac{1}{4}$ $\therefore Cov(X,Y) = E(XY) - E(X)E(Y) = \frac{1}{4} - \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{4}$ $\therefore Cov(X,Y) = \frac{Cov(X,Y)}{\sqrt{Vor(X)}\sqrt{Vor(Y)}} = \frac{\frac{1}{36} \int_{\frac{1}{3}}^{1}}{\sqrt{\frac{1}{3} \int_{\frac{1}{3}}^{1}}} = \frac{1}{2}$ $(c) Y_{1} = \frac{V}{V} + b(X - \mu_{X}) \rightarrow \frac{1}{2}b(X)d_{2}b^{\frac{1}{2}}b^{\frac{1}{2}}h^{\frac{1}{2}}h^{\frac{1}{2}}$ $(c) Y_{2} = \mu_{Y} + b(X - \mu_{X}) \rightarrow \frac{1}{2}b(X)d_{2}b^{\frac{1}{2}}h^{\frac{1}{2}}h^{\frac{1}{2}}h^{\frac{1}{2}}$ $= E[(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}]$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}]$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{\frac{1}{2}}(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{X})^{\frac{1}{2}} + 2b(X - \mu_{X})^{\frac{1}{2}}$ $= b^{\frac{1}{2}}(Y - \mu_{Y})^{\frac{1}{2}} - 2b(X - \mu_{X})(Y - \mu_{X})^{\frac{1}{2}} + 2b(X -$		$E(X^2) = \int_0^1 x^2 \cdot 2x dx = \frac{1}{2}$) \rightarrow Var(x) = $E(X^2) - E(X)^2 = \frac{1}{2} - (\frac{1}{2})^2 = \frac{18}{18}$					
$E(XY) = \int_{0}^{1} \int_{0}^{1} Ay_{1} \cdot \lambda dy dx = \int_{0}^{1} \int_{0}^{1} dx = \frac{1}{4}$ $\therefore Cou(X,Y) = E(XY) - E(X)E(Y) = \frac{1}{4} - \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{40} V$ $P_{XY} = \frac{Cov(X,Y)}{\sqrt{Vor(X)}\sqrt{Vor(Y)}} = \frac{\frac{1}{36} \int_{\frac{1}{16}}^{1} = \frac{1}{2} V$ $Con(X,Y) = \frac{1}{\sqrt{Vor(X)}\sqrt{Vor(Y)}} = \frac{1}{\sqrt{16} \int_{\frac{1}{16}}^{1} = \frac{1}{2} V$ $(con(X,Y) + b(X - \mu_X) \rightarrow \frac{1}{2} \int_{\frac{1}{16}}^{1} \int_{\frac{1}{16}}^{1} = \frac{1}{2} V$ $K(b) = E(d^{2}) = E[\frac{1}{2}(Y - \mu_{Y}) - b(X - \mu_{X})^{2}]$ $= E[(Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2}]$ $= \frac{1}{2} \int_{-2}^{2} $							
$Cov(x,v) = E(xy) - E(x)E(y) = \frac{1}{4} - \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{16}$ $Exy = \frac{Cov(x,v)}{\sqrt{Vow}(x)} = \frac{\frac{1}{36}}{\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{16}\sqrt{16}\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{16}\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{16}\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{16}\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{16}\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{16}\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(c) y = \frac{My + b(x - Mx)}{\sqrt{\frac{1}{16}}\sqrt{\frac{1}{8}}\sqrt{\frac{1}{8}}} = \frac{1}{2}$ $(d) y = \frac{1}{2} + \frac{1}$							
$P_{KY} = \frac{Cov(K,Y)}{\sqrt{Vor(Y)}} = \frac{\frac{1}{36}}{\sqrt{\frac{1}{18}}} = \frac{1}{2} \qquad \qquad$		$\xi(xy) = \int_0^1 \int_0^{\pi} yy \cdot 2 dy dx = \int_0^1 x^h dx = \frac{1}{4}$					
$P_{XY} = \frac{36}{\sqrt{100r(X)}\sqrt{100r(Y)}} = \frac{36}{\sqrt{18}} = \frac{1}{2}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2}b(x)d\frac{1}{2}\frac{1}{2}d^{2}+\lambda\mu_{Z}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2}b(x)d\frac{1}{2}\frac{1}{2}d^{2}+\lambda\mu_{Z}$ $(c) y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2}b(x - \mu_{X})^{2}$ $= E[(Y - \mu_{Y})^{2} - b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2}]$ $= b(Y - \mu_{Y})^{2} - 2b(X - \mu_{X})(Y - \mu_{Y}) + b^{2}(X - \mu_{X})^{2}$ $= b(h) = 2 \sigma_{X}^{2} - 20 \text{ ole } 2 (h) \approx b \text{ on } \text$		$Cov(X,Y) = E(XY) - E(X)E(Y) = \frac{1}{4} - \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{36} V$					
(c) $y = \mu_{Y} + b(x - \mu_{X}) \rightarrow \frac{1}{2} h_{2} h_{1} h_{2} h$		$P_{XY} = \frac{Cov(X_1Y)}{V_{200}(X_1)} = \frac{36}{15} = \frac{1}{2}$ $F_{XY} = \frac{Cov(X_1Y)}{V_{200}(X_1)} = \frac{36}{15} = \frac{1}{2}$ $F_{XY} = \frac{V_{200}(X_1)}{V_{200}(X_1)} = \frac{36}{15} = \frac{1}{2}$	-(Y				
$K(b) = E[d^{2}] = E[\{(Y-\mu_{Y})^{2} - b(X-\mu_{X})^{2}]\}$ $= E[(Y-\mu_{Y})^{2} - 2b(X-\mu_{X})(Y-\mu_{Y}) + b^{2}(X-\mu_{X})^{2}]$ $= \sigma_{Y}^{2} - 2b\sigma_{XY} + b^{2}\sigma_{X}^{2}$ $o(x) K''(b) = 2 \sigma_{X}^{2} - 20 o(2) K(b) = bo(x) + 2b\sigma_{X}^{2} = 0$ $\frac{3k(b)}{3b} = 2\sigma_{XY} + 2b\sigma_{X}^{2} = -2\rho_{XY}\sigma_{X}\sigma_{Y} + 2b\sigma_{X}^{2} = 0$ $\Rightarrow b = \rho_{XY}\frac{\sigma_{Y}}{\sigma_{X}} = \frac{1}{2}\frac{\sqrt{\frac{18}{8}}}{\sqrt{\frac{18}{8}}} = \frac{1}{2}$ $xchurd \frac{1}{2}(x) + \frac{1}{2}(x) +$							
$= E \left[(Y - \mu v)^{2} - 2b(X - \mu x)(Y - \mu v) + b^{2}(X - \mu x)^{2} \right]$ $= \sigma v^{2} - 2b \sigma_{XY} + b^{2} \sigma_{X}^{2}$ $o \text{TCH} K''(b) = 2 \sigma_{X}^{2} 70 \text{ oll } 2 K(b) \approx b \text{ oll } \text{ then oll } \text{ then oll } 2 \text{ then } 2 then $							
$\frac{\partial \text{ICH } K''(b) = 2 \sigma_{X^{2}}^{2} 70 \text{ olg 2} K(b) \frac{1}{5} \text{ both CHAH old bit 2} 0.9.2 \frac{1}{5} \text{ of } 2 \text{ bits 3} \text{ bits 3}$ $\frac{\partial K(b)}{\partial b} = 2 \sigma_{XY} + 2b \sigma_{X^{2}}^{2} = -2 \rho_{XY} \sigma_{X} \sigma_{Y} + 2b \sigma_{X^{2}}^{2} = 0$ $\Rightarrow b = \rho_{XY} \frac{\sigma_{Y}}{\sigma_{X}} = \frac{1}{2} \frac{\sqrt{\frac{1}{18}}}{\sqrt{\frac{1}{18}}} = \frac{1}{2}$ $\text{TCHAHA bits Milb bits 171 \text{ hits 2} \text{ bits 4} \text{ bits 171 \text{ hits 2}} \text{ bits 4} \text{ bits 171 \text{ hits 2}} \text{ bits 4} \text{ bits 171 \text{ hits 2}} \text{ bits 4} \text{ bits 171 \text{ hits 2}} \text{ bits 4} \text{ bits 171 \text{ hits 2}} \text{ bits 4} \text{ bits 171 \text{ hits 2}} \text{ hits 2} \text{ bits 171 \text{ hits 2}} \text{ hits 2} \text{ bits 171 \text{ hits 2}} \text{ bits 171 \text{ hits 2}} \text{ hits 2} \text{ bits 171 \text{ hits 2}} \text{ hits 2} \t$							
$\frac{3k(b)}{3b} = 2\sigma_{XY} + 2b\sigma_{X}^{2} = -2\rho_{XY}\sigma_{X}\sigma_{Y} + 2b\sigma_{X}^{2} = 0$ $\Rightarrow b = \rho_{XY}\frac{\sigma_{Y}}{\sigma_{X}} = \frac{1}{2}\frac{\sqrt{\frac{1}{18}}}{\sqrt{\frac{1}{18}}} = \frac{1}{2}$ $TCHUMM in it is in it is$		= 542-26 TX4 + 62 TX2					
$\Rightarrow b = P_{XY} \frac{\sigma_{Y}}{\sigma_{X}} = \frac{1}{2} \frac{\sqrt{\frac{1}{18}}}{\sqrt{\frac{1}{18}}} = \frac{1}{2}$ $\text{TCHMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{23}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2}$ $\text{TCMMM LIFTMER } y = \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2} + \frac{1}{3} + \frac{1}{2} (3 - \frac{1}{3}) = \frac{1}{2} + \frac{1}{3} + \frac{1}{2} + \frac{1}{3} + \frac{1}{2} + \frac{1}{3} + \frac{1}{2} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}$							
TCHWHO TIEMING \$1717442 = $\frac{1}{3} + \frac{1}{2}(3 - \frac{2}{3}) = \frac{1}{2}3$ # 4.4-10 $X \sim U(0,2)$, $Y \mid X=1 \sim U(0,3^2)$ 9 TCH (a) $(X_1Y) \sim U((0,2),(0,3^2))$ 0123 $f(3,3) = \frac{1}{23}$, $0 < 3 < 2$, $0 < 9 < 3^2$ (b) -2							
TCHWM 3/1924 3/2 1/2 $y = \frac{1}{3} + \frac{1}{2}(x - \frac{2}{3}) = \frac{1}{2}x$ # 4.4-10 $X \sim U(0,2)$, $Y \mid X = x \sim U(0,x^2)$ 9/3 9/3 1/3 1/3 1/3 1/3 1/3 1/3 1/3 1/3 1/3 1		$\rightarrow b = \rho_{XY} \frac{\sigma_Y}{\sigma_{Z}} = \frac{1}{2} \frac{\sqrt{\frac{1}{18}}}{\Gamma \Gamma} = \frac{1}{2}$					
# 4.4-10 $X \sim U(0,2)$, $Y \mid X=x \sim U(0,x^2)$ of the second		N (g					
(a) $(X_1Y) \sim U((0_12), (0_13^2)) 0 = \frac{1}{24} + 0 < 1 < 1 < 0 < 1 < 1 < 0 < 1 < 1 < 0 < 1 < 1$							
(v) -2	# 4.4-10						

#4.5-8			
	-10		