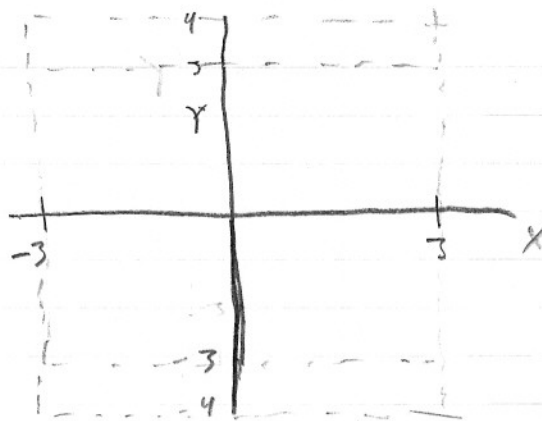


$$\text{IV. a. } 1 = \frac{c}{2} \int_3^4 (4-y) dy$$

$$= \frac{c}{2} \left[4y - \frac{y^2}{2} \right]_3^4$$

$$1 = \frac{c}{2} [16 - 8 - 12 + 4.5]$$

$$1 = \frac{c}{2} \left[\frac{1}{2} \right] \quad c = 4$$



$$\text{b. } F(b) = \int_{-4}^b (y+4) dy, \quad -4 \leq b \leq -3$$

$$F(b) = .5 + \int_3^b (y-4) dy, \quad 3 \leq b \leq 4$$

$$\text{c. } P(Y \leq 1) = .5$$

$$P(Y^2 \geq 2) = 1$$

$$P(-1.3 \leq Y \leq 3.1) = 0$$

$$\text{d. } E(Y) = 0$$

$$E(Y^2) = 4 \int_{-4}^{-3} y^3 + 4y^2 dy + 4 \int_3^4 (4y^2 - y^3) dy$$

$$\text{V. } E(k) = E(l) = \frac{0+1+2+\dots+9}{10} = 4.5$$

$$E(X) = E(k) + E(l) = 9$$

$$E(Y) = E(k)E(l) = 20.25$$

$$\rho(X, Y) = \frac{\text{cov}(X, Y)}{\sigma_x \sigma_y}$$

$$\text{Cov}(X, Y) = E(XY) - E(X)E(Y)$$