WH #5

1) $\sigma = \sqrt{\Sigma (x_i - \mu)^2 \cdot P(x_i)}$

$\mu = 0 \cdot .53 + 2 \cdot .31 + 4 \cdot .13 + 6 \cdot .03$

$\mu = 1.32$

$= (0 - 1.32)^2 \cdot .53$

$= + (2 - 1.32)^2 \cdot .31$

$= (4 - 1.32)^2 \cdot .13$

$= (6 - 1.32)^2 \cdot .03$

$\sigma = \sqrt{2.6576}$

$\sigma = 1.6302$

2) $\sigma = \sqrt{\Sigma (x_i - \mu)^2 \cdot P(x_i)}$

$\mu = 0 \cdot .4 + 2 \cdot .3 + 4 \cdot .2 + 6 \cdot .1$

$\mu = 2$

$(0-2)^2 \cdot .4$

$+ (2-2)^2 \cdot .3$

$(4-2)^2 \cdot .2$

$(6-2)^2 \cdot .1$

$\sigma = \sqrt{4}$

$\sigma = 2$

3) $\sigma = \sqrt{\Sigma (x_i - \mu)^2 \cdot P(x_i)}$

$\mu = 1 \cdot .28 + 2 \cdot .28 + 3 \cdot .04 + 4 \cdot .22 + 5 \cdot .18$

$\mu = 2.74$

$(1-2.74)^2 \cdot .28$

$(2-2.74)^2 \cdot .28$

$+ (3-2.74)^2 \cdot .04$

$(4-2.74)^2 \cdot .22$

$(5-2.74)^2 \cdot .18$

$\sigma = \sqrt{2.2724}$

$\sigma = 1.5074$

4) $\mu = 0 \cdot .2 + 1 \cdot .13 + 2 \cdot .29 + 3 \cdot .11 + 4 \cdot .02 + 5 \cdot .25$

$\mu = 2.37$

$\sigma = \sqrt{\Sigma (x_i - \mu)^2 \cdot P(x_i)} \Rightarrow (\mu - 2\sigma, \mu + 2\sigma)$

$(2.37 - 2(1.798), 2.37 + 2(1.798))$

$\boxed{(-1.2262, 5.9662)}$

$\sigma = \sqrt{3.2334}$

$\sigma = 1.7921$

$(0-2.37)^2 \cdot .2$

$(1-2.37)^2 \cdot .13$

$+ (2-2.37)^2 \cdot .29$

$(3-2.37)^2 \cdot .11$

$(4-2.37)^2 \cdot .02$

$(5-2.37)^2 \cdot .25$

5) $\mu = 0 \cdot .3077 + 1 \cdot .3029 + 2 \cdot .2088 + 4 \cdot .1806$

$\mu = 1.4429$

$\sigma = \sqrt{((0-1.4429)^2 \cdot .3077) + ((1-1.4429)^2 \cdot .3029) + ((2-1.4429)^2 \cdot .2088) + ((4-1.4429)^2 \cdot .1806)}$

$\sigma = 1.3949$

$\frac{\sigma}{\mu} = \frac{1.3949}{1.4429} = \boxed{.9667}$