

ANSWERS PRACTICE WORKSHEET SECTION 7.2

① a) $\mu_x = \boxed{7.16}$

b) $\sigma_x^2 = 1.5684$ $\sigma_x = 1.25$

$$P(\mu - 2\sigma \leq x \leq \mu + 2\sigma) = P(7.16 - 2.5 \leq x \leq 7.16 + 2.5)$$

$$= P(4.66 \leq x \leq 9.66) = P(5 \leq x \leq 9)$$

$$= .04 + .17 + .38 + .25 + .12 = \boxed{0.96}$$

② a) $\mu_{x+y} = \mu_x + \mu_y = 625 + 590 = \boxed{1215}$

b) SAT scores (math + verbal) are not independent.

③ a) $\mu_x = \boxed{5000}$

$\mu_y = \boxed{445}$

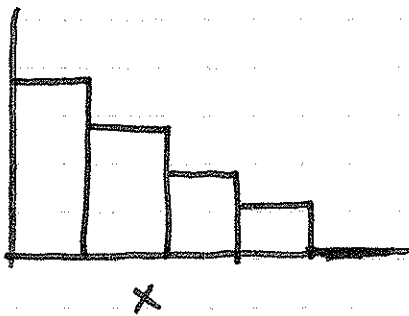
b) $\mu_{2000x} = 2000\mu_x = \boxed{\$1,000,000}$

$\mu_{3500y} = 3000\mu_y = \boxed{\$1,557,500}$

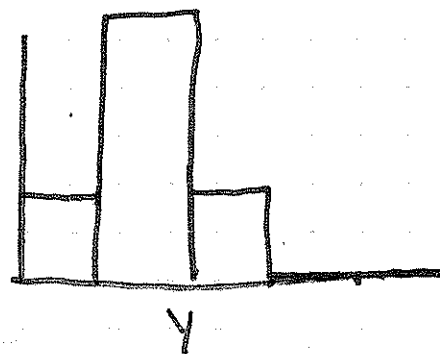
c) $\mu_z = \mu_{2000x} + \mu_{3500y} = \boxed{\$1,557,500}$

④ $\mu_z = \mu_{0.2x + 0.8y} = 0.2\mu_x + 0.8\mu_y = .1168 = \boxed{11.68\%}$

⑤ a) $P(x)$



$P(y)$



b) $\mu_x = 1$ $\mu_y = 1$

$\therefore X$ has larger spread, more variability.

c) $\sigma_x = 1$ $\sigma_y = 0.632$

$\therefore \sigma_x > \sigma_y$ confirms the impression conveyed by the histograms concerning variability in X and Y .

⑥ $\mu_{M2} = \boxed{636}$

$\mu_{M2} = \boxed{622.40}$

$\sigma_{M2} = \boxed{84}$

$\sigma_{M2} = \boxed{75.6}$