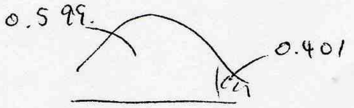
6.10

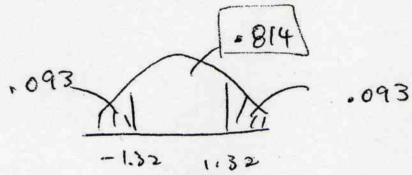
a) $Pr(x > 500) = Pr(z > \frac{500-470}{120}) = Pr(z > 0.25) = 0.401$.



b) $SE = 7.59 = \frac{\sigma}{\sqrt{n}} = \frac{120}{\sqrt{250}}$

We want to find the probability that $\bar{x}$ is within 10 points of μ (470) (i.e. 460-480)

First, find $P(x > 480) = P(z > \frac{480-470}{7.59}) = Pr(z > 1.32)$



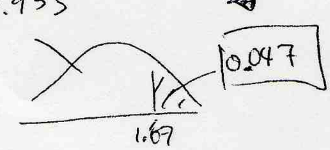
Then, find $P(x < 460) = P(z < \frac{460-470}{7.59}) = Pr(z < -1.32)$

For the second part, refer to figure 6-6.

6.11 $\mu = 16.2$

$\sigma = .12$

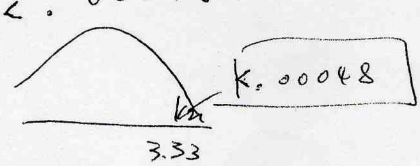
$Pr(x < 16) = Pr(z > 1.67) = Pr(z > 1.67)$ 0.953



a) $z = \frac{16 - 16.2}{.12}$ $SE = \frac{\sigma}{\sqrt{n}} = \frac{.12}{\sqrt{1}} = .12$

$= -1.67$.

b). $Pr(x < 16) = Pr(z < -3.33) = Pr(z > 3.33) < .00048$.



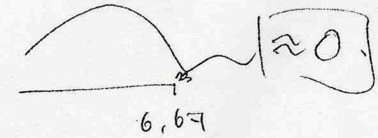
$z = \frac{16 - 16.2}{.06}$ $SE = \frac{\sigma}{\sqrt{n}} = \frac{.12}{\sqrt{4}} = .06$

$= -3.33$

c)

$Pr(x < 16) = Pr(z < -6.67) = Pr(z > 6.67) \approx 0$.

$z = \frac{16 - 16.2}{.03}$ $SE = \frac{\sigma}{\sqrt{n}} = \frac{.12}{\sqrt{16}} = .03$



$= -6.67$

7.1 a) (T) b) (F) Interchange μ & $\bar{x}$ c) (F) If we quadruple the sample size. ... d) (T)