EAS595 Matthew Sch.

(1) 3900 lbs

40 n

$\mu = 97$

$\sigma = 5$

$$\frac{3900 - 40 \times 97}{\sqrt{25 \times 40}} = \frac{12}{10\sqrt{10}} = 3.797$$

$$\Phi(3.797) = 0.7357$$

(3) Accuracy = 0.8

a) std = 0.16

n = 100

$$P(79 < X < 81)$$

$$= P\left(\frac{79-80}{0.16 \times \sqrt{n}} < X < \frac{81-80}{0.16 \times 10}\right)$$

$$= P\left(\frac{1}{1.6}\right) - P\left(\frac{-1}{1.6}\right)$$

$$= P(0.625) - P(-0.625)$$

$$= 0.7340 - 0.2660$$

$$= 0.4680$$

b) $\alpha = 0.05$

$Z_{\alpha/2} = 1.96$

$$80 \pm 1.96 \times \frac{\sigma}{\sqrt{n}}$$

$$= (76.86, 83.14)$$

2.

A, mean : 2.4.

A.sed = 2.0

n = 100.

days = 200, 200 ~ 250 , 400

$$ = 10000, 6000, -4000.

10000×0.02275

$+\ 6000 \times 0.66877$

$= 4239.76.$

$P(S < 200)$

$= \frac{200 - 100 \times 2.4}{\sqrt{400}} = -2$

$\Phi(-2) = 0.02275$

$P(200 < S < 250)$

$P(250) - P(200)$

$= P\left(\frac{250 - 240}{20}\right) - P(-2) = 0.66871$

$= P(0.5) - P(-2)$

$P(S > 400)$.

$\frac{400 - 240}{\sqrt{400}} = \frac{160}{20} = 8 \doteq 0.$

4

$B \longrightarrow \overset{\mu}{50{,}000}$, $\sigma = 10{,}000$

$74000 \longleftarrow 47.000$ $n = 11.$

$$\frac{(74000-50000) - 11\times(50.000-47.000)}{\sqrt{10{,}000^2 \times 11}} = \frac{21000}{33166}$$

a)

$= 0.633$

$1 - \Phi(0.633) = 0.26435$

b) $0.05 = \Phi(2.575)$ $\square$ = total buy in 11 weeks

$$\frac{54000 - (\square - 11(50000))}{33166} = 2.575$$

$\cancel{54000} - (\square + 11(50000)) = 85402.45$

$\square = 581402.45$

$\square / 11 = 52854.77.$