1) Look up 0.475 in Table III $\Rightarrow z_{0.025} \approx 1.96$

2) $P(-1.282 < z < 1.282) \approx 0.8064 \Rightarrow 80\%$ CI.

3) Sampling is not random

4) Look at computational formula. (Section 5.5, page 261)

5) See page 260. Box at the bottom of the page.

6) $7.2 \pm z_{0.005}\left(\frac{3.2}{\sqrt{402}}\right) \approx 7.2 \pm 2.57\left(\frac{3.2}{\sqrt{402}}\right) \approx 7.2 \pm 0.410$

7) Look up the entry in row 20, column 2 in Table N

8) Small sample so population of total compensations must be approximately normally distributed.

9) Small sample. $28.1 \pm t_{0.05}\left(\frac{2.1}{\sqrt{9}}\right) \approx 28.1 \pm 1.860(0.7) \approx 28.1 \pm 1.302$

10) See p. 286. $n = \frac{(z_{0.05})^2(16)}{(1)^2} \approx \frac{(1.645)^2(16)}{} \approx 43.3$

11) See page 261.

12) Option B

13) See page 305. Table 6.1

14) See page 305. Table 6.1

15) one-tail test for $\alpha = 0.05$. Look up 0.45 in Table III. $z < -1.645$

16) 20 is not in the CI $\Rightarrow$ reject H_0

17) The rejection region for one-tailed test with $\alpha = 0.01$ is $z > 2.33$
So, we can't reject H_0.

18) p-value $< 0.05 \Rightarrow$ reject H_0

19) $t = \frac{14.17 - 14}{0.25/\sqrt{25}} \approx 3.4$

20) Small sample so use t-distribution. Look up $t_{0.01}$ with 14 df. in Table N. $t > 2.624$

21) a) $H_0: \mu = 600$
$H_a: \mu > 600$

b) one tailed right

c) $z = \frac{625 - 600}{\left(\frac{100}{10}\right)} = 2.5$

d) rejection region $z > 1.645$

e) p-value $= 1 - 0.4938$
≈ 0.006

f) reject H_0

g) At the $\alpha = 0.05$ level we have evidence to support H_a.

22) a) $H_0: \eta = 40$
$H_a: \eta > 40$

b) 2

c) $p(x \geq 2) = 1 - p(x \leq 1)$
$\approx 1 - 0.109$
≈ 0.891

d) Fail to reject H_0 at $\alpha = 0.05$ level. True mean life of new bulbs probably exceeds 600 hrs