Chapter 22

Solutions

2 a. $N_{\bar{x}} = 30\,000$
b. $Ns_{\bar{x}} = 320$
c. 29 360 to 30 640

4 73

6 a. 0.0222
b. 0.0206
c. The estimate of the standard error in part (a) is larger because p is closer to 0.50.
d. 0.506 to 0.594
e. 0.269 to 0.351

8 a. Stratum 1: $\bar{x}_1 = 138$
Stratum 2: $\bar{x}_2 = 103$
Stratum 3: $\bar{x}_3 = 210$
b. Stratum 1: 125.3 to 150.7
Stratum 2: 94.4 to 111.6
Stratum 3: 192.7 to 227.3
c. 128.4 to 142.0

10 a. Stratum 1: 0.288 to 0.712
Stratum 2: 0.638 to 0.928
Stratum 3: 0.069 to 0.351
b. $p_{st} = 0.5745$
c. 0.0519
d. 0.471 to 0.678

12 a. $n = 28, n_1 = 10, n_2 = 14, n_3 = 4$
b. $n = 33, n_1 = 13, n_2 = 10, n_3 = 9$

14 a. $\bar{x}_c = 15, \bar{X} = M\bar{x}_c = 4500, p_c = 0.30$
b. $s_{\bar{x}c} = 1.4708, s_{\bar{X}} = 441.24, s_{pc} = 0.0484$
c. 12.1 to 17.9
d. 3618 to 5382
e. 0.203 to 0.397

16 a. Estimate of mean age of mechanical engineers: 40 years
b. Estimate of proportion attending local university: 0.70
c. 35.9 to 44.1
d. 0.523 to 0.877