Oluwakemi Omotoyinbo
Chapter 6 Questions

6.12 Legalization of marijuana, Part I.

b) 95% CI

$$SE_{.48} = \sqrt{\frac{P(1-P)}{n}}$$

$$= \sqrt{\frac{.48(1-.48)}{1259}}$$

$SE_{.48} = .0141$

CI = pt. estimate $\pm$ z^* SE

$= .48 \pm 1.96(.0141)$

$\boxed{(.45, .51)}$

6.20 Legalization of marijuana, Part II.

$z^* = 1.96$

$ME = z^* \sqrt{\frac{P(1-P)}{n}} = .02$

$= \left(1.96 \sqrt{\frac{.48(1-.48)}{n}} = .02\right)^2$

$= 1.96 \cdot \left(\frac{.48(1-.48)}{n}\right) = .0004$

$= 1.96 \cdot \frac{.2496}{.0004} = n$

$n = 1,223.04 \approx \boxed{1224 \text{ participants}}$

6.44 Barking deer:

	Woods	Cultivated grassplot	Deciduous Forest
Expected:	20.448	62.622	168.70
Observed:	4	16	61

Other	Total
174.234	426
345	426

$$\frac{(\text{observed count} - \text{expected count})^2}{\text{expected count}}$$

$$\text{woods} = \frac{(4 - 20.448)^2}{20.448} = \frac{270.54}{20.448} = 13.23$$

$$\text{cultivated} = \frac{(16 - 62.622)^2}{62.622} = \frac{2173.641}{62.622} = 34.71$$

$$\text{deciduous forest} = \frac{(61 - 168.70)^2}{168.70} = 68.716$$

$$\text{other} = \frac{(345 - 174.234)^2}{174.234} = 167.867$$

$$\chi^2 = 284.067$$

$$df = (2-1) \cdot (4-1) = 1 \cdot 3 = 3$$