6.2 X = 123.8 bu/acre, and er,@ = *101-@11-5* 1 2.582 bulacre. **(a)-(c)** See the table; the intervals are X ± z*ui, **(d)** The margin of error increases with the confidence level.

Conf. Level	z*	Interval
	1.645	119.6 to 128.0 bu/acre
	1.960	118.7 to 128.9 bu/acre
	2.576	117.1 to 130.5 bu/acre

6.14 **(a)** $10.0023 \pm (2.326)(0.0002/\sqrt{5}) = 10.0021$ to 10.0025 g.
(b) $n = \left(\frac{(2.326)(0.0002)}{0.0001}\right)^2 \doteq 21.64$—take $n = 22$.

6.19 **(a)** (0.95)' --' 0.698 69.8%. **(b)** (" (0.95)6(0.05) + (0-95)" -' 0.956 = 95.6%.
6)

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6.30 Even if calcium were not effective in lowering blood pressure, there might be *some* difference in blood pressure between the two groups. However, in this case the difference was so great that it is unlikely to have occurred by chance (if we assume that calcium is not effective). Therefore we reject the assumption that calcium has no effect on blood pressure.

6.38 **(a)** *HO:* a = @.5 mg/di; *H,,: A :A* 9.5 mg/dI. **(b)** z = 9,58-9.5 0.4/,71'80 ' 2.68 and P '- 0.0074.
This is strong evidence against HO; the pregnant women's calcium level is different from 9.5 mg/dI. (e) 9.58 ± (1.96)(0.4/,/18-0) -- 9.52 to 9.64 mg/dI.

6.54 There is evidence that vitaniin C is effective, but not necessarily that the effect is "strong." The large sample sizes could make even a small effect significant.

6.60 Using ct/6 = 0.0083 as the cutoff, the fourth (P = 0.008) and sixth (P = 0.001) are significant.

6.62 **(a)** X has a binomial distribution with n = 77 and p = 0.05. ***(b)*** *P(X* >- 2) = I - *P(X* < 1) = I - (0.95)77 _ (717)(0.95)76 (0.05) - 0.9027.

6.64 z < - 1.645 is equivalent tof < 300 - 1.645 (3/,/6-) 297.99.

(a) *P (.f* < 297.99 when 299) -- *P Z* < 297.99-299) *P(Z* < -0.8287) = 0.2036.
3/76-

z < 297.99-295) *P(Z* < 2.437) = 0.9926. **(b)** *P* (.jF < 297.99 when 295) = *P* (- -*31,76'*

(e) The power against ju 290 would be greater-it is further from AO (300), so it easier to distinguish from the null hypothesis.

6.70 **(a)** P (Type I error) = *P(X #* 4 and X *:0* 6 when the distribution is po) = *0.5.* **(b)** *P(l@@* 11 error) = *P(X* = 4 or *X* = 6 when the distribution is pl) = 0.3.