Form B

1. (a), (b), and (d)

2. reciprocal inequalities = (c)
   developed capabilities = (e)
   innate potentialities = (a)

3. (b) and (e)

5. (a) 99.7% (b) When $np \geq 10$ and $n(1-p) \geq 10$

6. (c) It's an estimator of μ, the population mean difference in corneal thickness between an eye with glaucoma and a healthy eye.

   (f) A bootstrap sample here satisfies these criteria
   - draw from the original with replacement
   - obtain a sample of the same size as original (violated here)

   (g) A 99% bootstrap percentile interval should extend from the 0.5-percentile to the 99.5-percentile. With 1000 points, these percentiles are 5 away from the two ends. Estimating, that is approximately $(-11.1, 5.8)$.

   (h) qt(0.995, df = 7)

   (i)
   $$0.1 \pm (3.2498)\frac{6.7239}{\sqrt{10}}, \quad \text{or} \quad (-6.81, 7.01)$$

7. (a) qnorm(0.08)

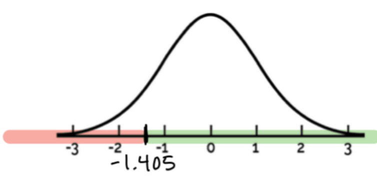
   (b) $\hat{p} = \frac{33}{100} = 0.33$, $E(\hat{p}) = p = 0.35$, $Var(\hat{p}) = \sqrt{\frac{p(1-p)}{n}} = \sqrt{\frac{(.35)(.65)}{100}} = 0.047697$

   $$\Rightarrow Z = \frac{\hat{p} - p}{\sqrt{p(1-p)/n}} = \frac{0.33 - 0.35}{0.047697} \doteq -0.4193$$

   (c) pnorm(−0.4193) or pbinom(33, 100, 0.35)

   (d) (iii)

   (e) The rejection region is $Z < -1.405$, and so $Z = -0.4193$ is in the nonrejection region. We fail to reject H_0.



   (f) We reject H_0 when the Z-score

   $$Z = \frac{0.33 - 0.35}{\sqrt{(.35)(.65)/n}} < -1.4051 \Rightarrow \left(\frac{0.02}{1.4051}\right)^2 > \frac{(0.35)(0.65)}{n}$$

   $$\Rightarrow n > \frac{(0.35)(0.65)}{(0.02/1.4051)^2} = 1122.89$$

   $\boxed{\text{So } n = 1123 \text{ is minimal.}}$