1\. (b) point est. is in the middle of the interval $= \frac{1}{2}(14.37 + 17.17) = 15.77$

(c) Since 17.5 is outside the 92% CI $(14.37, 17.17)$, the P-value is less than 0.08.

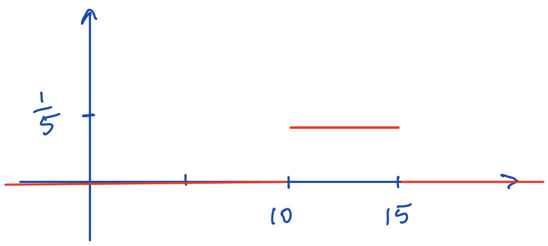
(d) margin of error $= \frac{1}{2}$(width of interval) $= \frac{1}{2}(17.17 - 14.37) = 1.4$

(e) Decreasing by factor $(\frac{1}{3})$ is achieved by $(3)^2 n = (9)(82) = 738$.

2\. Option (d)

3\. Option (d)

4\. (a)



(b) $Pr(X \geq 11) = Pr(11 \leq X \leq 15) = (4)(\frac{1}{5}) = 0.8$

(c) $E(X) = \frac{1}{2}(10 + 15) = 12.5$, $\sigma_x = \frac{15-10}{\sqrt{12}} = \frac{5}{2\sqrt{3}} \doteq 1.443$

(d) With $n=30$, $\bar{X} \overset{\text{approx.}}{\sim} \text{Norm}(12.5,\ 1.433/\sqrt{30})$

$Pr(\bar{X} \geq 11) = 1 - \text{pnorm}(11, 12.5, 0.2635)$

5\. $A < C < B$

7\. (a) $z^* = 1.750686$

(b) Take $n \geq \left[\frac{1.75069}{2(0.035)}\right]^2 = 629.07$, so at least $n = 630$.

(c) $\hat{p} = \frac{91}{217} \doteq 0.4194$, $SE_{\hat{p}} = \sqrt{\frac{\hat{p}(1-\hat{p})}{n}} \doteq \sqrt{\frac{(0.4194)(0.5806)}{217}} \doteq 0.0335$

So, boundaries are $0.4194 \pm (1.750686)(0.0335)$, or $(0.361, 0.478)$

8\. (a) $H_0: \mu = 72$, $H_a: \mu \neq 72$

(b) $t = \frac{\bar{x} - 72}{s/\sqrt{n}} = \frac{69.4 - 72}{11.2974/\sqrt{40}} = \frac{-2.6}{1.7863} \doteq -1.456$

P-value: 2 * pt(-1.456, 39)

(c) qt(0.97, 39)

(d) $\bar{x} \pm t^* SE_{\bar{x}} = 69.4 \pm (1.937)\frac{11.2974}{\sqrt{40}}$, or $(65.94, 72.86)$