ubject ▶ Date ▶

(1) $\hat{p} = \frac{105}{250} = 0.42$

$0.42 \pm z_{0.05}\sqrt{\frac{0.42 \times 0.58}{250}} = 0.42 \pm 1.645 \times 0.03$

$= 0.42 \pm 0.05 \Rightarrow (0.37, 0.47)$

(2) (a) $\hat{p} = 0,03 \quad 1-\alpha = 0.95 \quad , e = \frac{\sigma}{\sqrt{n}} \times z$

$n = \left(\frac{z}{e}\right)^2 \times \hat{p} \times (1-\hat{p})$

$n = \left(\frac{1.96}{0,3}\right)^2 \times 0.3 \times 0,7 = 896.37 \doteq 897$

(b) $\hat{p} = 0.42$

$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.42 \times 0.58 = 1,03999 \doteq 1040$

(c) $\hat{p} = 0.5$

$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.5 \times 0.5 = 1057.11 \doteq 1058$