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

$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.5 \times 0.5 = 1067.11$
$= 1068$

$e = \frac{b}{\sqrt{n}} \times z_{\frac{\alpha}{2}}$

(d) i. $b = 3$ $e = 0.05$ $1-\alpha = 0.95$

~~$n = 0.05$~~

$n = \left(\frac{3}{0.05}\right)^2 \times 1.96^2 = 138.3$
$= 139$

$b = 0.2$ $e = 0.03$ $1-\alpha = 0.9$

$n = \left(\frac{0.2}{0.03}\right)^2 \times 1.645^2 = 120.27$
$= 121$

(3) $b = 0.05$ $e = 0.02$ $1-\alpha = 0.98$

$n = \left(\frac{0.05}{0.02}\right)^2 \times 2.326^2 = 33.8 = 34$

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

$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.42 \times 0.58 = 1039.79$

$= 1040$

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

$n = \left(\frac{1.96}{0.03}\right)^2 \times 0.5 \times 0.5 = 1067.11$

$= 1068$

2. $e = \frac{b}{\sqrt{n}} \times z_{\frac{\alpha}{2}}$

(1). $b = 3 \quad e = 0.5 \quad 1 - \alpha = 0.95$

~~$n = \frac{\quad}{0.05}$~~ $n = \left(\frac{3}{0.5}\right)^2 \times 1.96^2 = 138.3$

$= 139$