

Unit #1 Test #2 Review Worksheet

① $\bar{x} = 3.7$ $\mu = 0.6$ $n = 32$ $z = \frac{0.6}{\sqrt{32}} = 1.061$
 $P(X < 3.4) = P\left(z < \frac{3.4 - 3.7}{\frac{.6}{\sqrt{32}}}\right) = P(z < -2.83) = \boxed{.0023}$

② $\bar{x} = 72$ $\mu = 6$ $n = 15$ $z = \frac{6}{\sqrt{15}} = 1.55$
 $P(X < 75) = P\left(z < \frac{75 - 72}{\frac{6}{\sqrt{15}}}\right) = P(z < 1.94) = \boxed{.9738}$

③ $\bar{x} = 55$ $\mu = 8$ $n = 12$ $z = \frac{8}{\sqrt{12}} = 2.31$
 $P(X > 60) = P\left(z > \frac{60 - 55}{\frac{8}{\sqrt{12}}}\right) = P(z > 2.17) = \boxed{.015}$

④ sample mean

⑤ sample large $n \geq 30$ normal population normal

⑥ 90% 95% 99%

⑦ t ⑧ normal

⑨ $\bar{x} = 23.45$ $\mu = 2.80$ $n = 49$ $df = 48$ $CL = .90$
 (use 40)

$$23.45 \pm 1.684 \left(\frac{2.80}{\sqrt{49}}\right)$$

$$23.45 \pm 1.684(.4)$$

$$23.45 \pm .6736$$

$$\boxed{(22.7764, 24.1236)}$$

⑩ $\bar{x} = 44.80$ $\mu = 3.53$ $n = 30$ $df = 29$ $CL = .95$

$$44.80 \pm 2.045 \left(\frac{3.53}{\sqrt{30}}\right)$$

$$44.80 \pm 2.045(.6445)$$

$$44.80 \pm 1.318$$

$$\boxed{(43.482, 46.118)}$$

$$(11) \quad n=100 \quad x=85 \quad \hat{p} = \frac{85}{100} = .85 \quad CL = .90 \quad z^* = 1.645$$

$$.85 \pm 1.645 \left(\sqrt{\frac{(.85)(.15)}{100}} \right)$$

$$.85 \pm 1.645 (.0357)$$

$$.85 \pm .0587$$

$$(.7913, .9087)$$

$$(12) \quad n=90 \quad \hat{p} = .4 \quad CL = .95 \quad z^* = 1.96$$

$$.4 \pm 1.96 \left(\sqrt{\frac{(.4)(.6)}{90}} \right)$$

$$.4 \pm 1.96 (.0516)$$

$$.4 \pm .1012$$

$$(.2988, .5012)$$