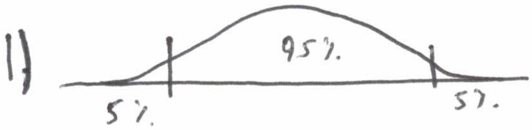
1) 

The Area lies between $-Z$ and Z is 95%.

Area Left of $-Z = \frac{1-0.95}{2} = 0.025$

$P(Z \le z) = 0.025$

From the standard normal table value we get $z = -1.960$

98% of the area under the standard normal curve lies between the Z values -1.960 and 1.960

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2) $\mu = 50 \quad \sigma = 3$

$Z = \frac{x-\mu}{\sigma} = \frac{55-50}{3} = 1.66$

$P(X > 55) = P(Z > 1.66) = 0.0478$

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3) $\mu = 25 \quad \sigma = 15 \quad n = 49$

A) $\mu_{\bar{x}} = \mu = 50$

b) $\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{15}{\sqrt{49}} = \frac{15}{7} = 2.143$

c) $P(24 \le \bar{x} \le 32) = P\left(\frac{24-25}{2.143} \le Z \le \frac{32-25}{2.143}\right)$

$= P(-0.4666 \le Z \le 3.266) = 0.9995 - 0.3204$

$= 0.6791$

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4) A) yes it is Appropiate to use normal approximation to the binomial because

$600 \times .70 (1-0.70)$

$= 126 > 10$

b) $600 \times .70 = 420$

$= \sqrt{600 \times .70 \times 0.3}$

$= 11.2250$

$= P(350 < x < 390)$

$= P\left(\frac{350-420}{11.2250} < \frac{x-\mu}{\sigma} < \frac{390-420}{11.2250}\right)$

$= P(-6.236 < Z < -2.6726) = 0.0038$

5) $\bar{x} = 23{,}500$ k

$\sigma = 3{,}900$ k

$n = 100$

Confidence = 99%

$\frac{\alpha}{2} = \frac{1-99\%}{2} = 0.005$

$Z_{1-\alpha/2} = Z_{0.995} = 2.5758$

$23500 - 2.5758 \times \frac{3900}{\sqrt{100}} < \mu < 23500 - 2.5758 \times \frac{3900}{\sqrt{100}}$

$23500 - 1004.573 < \mu < 23500 + 1004.573$

$= 22495.43 < \mu < 24504.57$

6) $E = 15$, $Z = 1.96$, $\sigma = 40$

$n = \frac{Z^2 \sigma^2}{E^2}$

$n = \frac{(1.96)^2 (40)^2}{15^2}$

$= \frac{(3.8416)(1600)}{225}$

≈ 27.31804

≈ 28