

$$\hat{p} \pm E$$

$$\bar{x} \pm Z_c \left(\frac{s}{\sqrt{n}} \right)$$

Apr 18-7:43 AM

$Z_c \left(\frac{s}{\sqrt{n}} \right)$
Margin of Error
E

⑥ $C = .85$
 $\frac{1-.85}{2} = .075$
Inverse Norm .075 $Z_c = 1.44$

⑧ $C = .97$
 $\frac{1-.97}{2} = .015 = 2.17$

Apr 18-11:08 AM

P311
5) $C = .80$

80%
 $\frac{1-.80}{2} = .10$
Z-scores: -1.28 and 1.28

Apr 18-7:50 AM

6) $C = .85$
 $\frac{1-.85}{2} = .075$
 $Z_c = 1.44$
Inv Norm = 1.44

Apr 18-7:53 AM

7) $C = .75$
 $Z_c = \frac{1-.75}{2} = .125$
 $Z_c = \text{Inv Norm} (.125) = 1.15$

Apr 18-7:55 AM

Sampling Error =
Difference Between
 $\bar{x} - \mu$
Sample mean & population mean

9) $3.8 - 4.27 = -0.47$
10) $9.5 - 8.76 = 0.74$

Apr 18-7:57 AM

Z_c = Critical Value

S = Standard deviation of Sample

n = Sample size

\bar{x} = Sample mean, point Estimate (\hat{p})

μ = population mean


E = margin of Error

$$Z \left(\frac{s}{\sqrt{n}} \right)$$

13) $C = .95 \rightarrow \frac{1-.95}{2} Z(.025) = 1.96$

$S = 5.2$

$n = 30$



$$E = Z_c \left(\frac{s}{\sqrt{n}} \right) \rightarrow 1.96 \left(\frac{5.2}{\sqrt{30}} \right) = \boxed{1.861}$$

Apr 18-11:15 AM

Apr 18-11:18 AM

13) $E = Z_c \left(\frac{s}{\sqrt{n}} \right)$

$C = .95 \rightarrow \frac{1-.95}{2} = .025 = Z_c = 1.96$

$S = 5.2$

$n = 30$

$$E = 1.96 \left(\frac{5.2}{\sqrt{30}} \right) = \boxed{1.861}$$

Apr 18-8:00 AM

14 $E = Z_c \left(\frac{s}{\sqrt{n}} \right)$

$C = .90 \rightarrow \frac{1-.90}{2} = .05 \quad Z_c = 1.64$

$S = 2.9$

$n = 50$

$$1.64 \left(\frac{2.9}{\sqrt{50}} \right) = \boxed{.675}$$

Apr 18-8:04 AM

15) $C = .80 \rightarrow \frac{1-.80}{2} = .10 \quad Z_c = 1.28$

$S = 1.3$

$n = 75$

$$E = 1.28 \left(\frac{1.3}{\sqrt{75}} \right) = .1921$$

Apr 18-11:24 AM

16) $C = .975 \quad \frac{1-.975}{2} = .0125 \quad Z_c = 2.24$

$S = 4.6$

$n = 100$

$$E = 2.24 \left(\frac{4.6}{\sqrt{100}} \right) = \boxed{1.03}$$

Apr 18-11:28 AM

17) $\bar{x} = 57.2$
 $C = .88 \rightarrow Z_c = 1.55$
 $S = 7.1$
 $n = 50$

$$57.2 \pm 1.55 \left(\frac{7.1}{\sqrt{50}} \right) \quad 57.2 \pm 1.56$$

Apr 18-11:30 AM

20) $\bar{x} = 57.2$
 $C = .98 \rightarrow \frac{1-.98}{2} \rightarrow Z_c = 2.33$
 $S = 7.1$
 $n = 50$

$$57.2 \pm 2.33 \left(\frac{7.1}{\sqrt{50}} \right)$$

$$57.2 \pm 2.34$$

Apr 18-11:36 AM

22) $\bar{x} = 31.39$
 $C = .95 \rightarrow \frac{1-.95}{2} = .025 = 1.96$
 $S = .8$
 $n = 82$

$$31.39 \pm 1.96 \left(\frac{.8}{\sqrt{82}} \right)$$

$$31.39 \pm .17315 \dots$$

(31.22, 31.56)

Apr 18-11:41 AM

27) (1.71, 2.05)

$$\frac{1.71 + 2.05}{2}$$

$$\bar{x} = 1.88$$

$$E = 1.88 - 1.71 = .17$$

Apr 18-11:57 AM

$$E = Z_c \left(\frac{s}{\sqrt{n}} \right)$$

$$\frac{E}{Z_c} = \frac{s}{\sqrt{n}}$$

$$\sqrt{n} = \frac{Z_c s}{E}$$

$$(\sqrt{n})^2 = \left(\frac{Z_c s}{E} \right)^2$$

Apr 18-12:00 PM

$$E = Z_c \left(\frac{s}{\sqrt{n}} \right)$$

$$\frac{E}{Z_c} = \frac{s}{\sqrt{n}}$$

$$\sqrt{n} = \frac{Z_c s}{E}$$

$$(\sqrt{n})^2 = \left(\frac{Z_c s}{E} \right)^2$$

$$n = \left(\frac{Z_c s}{E} \right)^2$$

31) $C = .80 \rightarrow Z_c = 1.28$
 $S = 4.1$
 $E = 2$
 $n = \left(\frac{1.28 \cdot 4.1}{2} \right)^2 \approx 6.88$ Round up 7

Apr 18-12:02 PM

32 $n = \left(\frac{Z_{\alpha/2} S}{E}\right)^2$

$C = .98 \rightarrow .01$ $Z_c = 2.33 \leftarrow \begin{matrix} \text{Inv Norm} \\ .01 \end{matrix}$

$S = 10.1$

$E = 2$

$n = \left(\frac{(2.33)(10.1)}{2}\right)^2 \rightarrow \text{Round UP} = 139$

Apr 18-12:07 PM

33) $(26.2, 30.1)$

$\bar{x} = \frac{26.2 + 30.1}{2} = 28.15$

$E = 28.15 - 26.2 = 1.95$

Apr 18-12:11 PM

35

Apr 18-12:13 PM

24) $C = .80$ $1 - .80/2 = .10$ $Z_c = 1.28$

$\bar{x} = 20.6$

$S = 4.7$

$n = 100$

$20.6 \pm 1.28 \left(\frac{4.7}{\sqrt{100}}\right)$

$20.6 \pm .6016$

$(20, 21.20)$

Apr 18-11:50 AM

28) $(3.144, 3.176)$

$\frac{3.144 + 3.176}{2} = 3.16$

$3.144 \xrightarrow{.016} 3.16 \xrightarrow{.016} 3.176$

$\bar{x} = 3.16$

$3.16 - 3.144 = .016$

$3.176 - 3.16 = .016$

$\bar{x} = 3.16$
 $E = .016$

Apr 18-11:53 AM

17. $\bar{x} = 57.2$ $C = .88 \rightarrow \frac{1 - .88}{2} = .06$ $Z_c = 1.55$

$S = 7.1$

$n = 50$

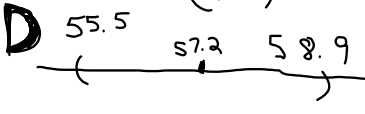
$\bar{x} \pm E$
 $Z \left(\frac{S}{\sqrt{n}}\right)$

$57.2 \pm 1.55 \left(\frac{7.1}{\sqrt{50}}\right)$ 57.2 ± 1.556342025

$55.64 \quad 57.2 \quad 58.76$

$(55.64, 58.76)$

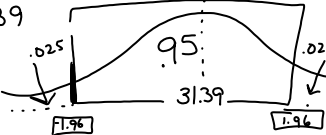
Apr 18-8:12 AM

18) $\bar{x} = 57.2$
 $C = .90 \frac{1-.90}{2} = .05 \quad Z_c = 1.64$
 $S = 7.1$
 $n = 50$
 $57.2 \pm 1.64 \left(\frac{7.1}{\sqrt{50}} \right)$

 D 55.5 57.2 58.9

Apr 18-8:20 AM

21) $\bar{x} \pm E$
 $C = .90 \rightarrow Z_c = 1.64$
 $\bar{x} = 12.3$
 $S = 1.5$
 $n = 50$
 $12.3 \pm 1.64 \left(\frac{1.5}{\sqrt{50}} \right)$
 $12.3 \pm .34789\dots$
 (11.95, 12.65)

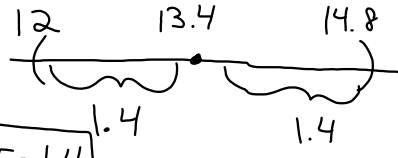
Apr 18-8:23 AM

22) $\bar{x} = 31.39$
 $C = .95$
 $S = .8$
 $n = 82$
 $31.39 \pm 1.96 \left(\frac{.8}{\sqrt{82}} \right)$
 $\bar{x} \pm E$

 $\frac{1-.95}{2} = \frac{.05}{2} = .025$
 InvNorm .025
 $Z_c = 1.96$
 (31.39)
 $31.39 \pm 1.96 \left(\frac{.8}{\sqrt{82}} \right)$
 $31.39 \pm .1732$
 (31.22, 31.56)

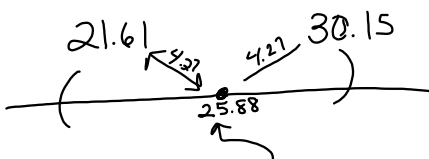
Apr 18-8:29 AM

23) $\bar{x} = 10.5$
 $C = .99$
 $S = 2.14$
 $n = 45$
 $C = .99 \frac{1-.99}{2} = .005 \quad Z_c = 2.58$
 $10.5 \pm 2.58 \left(\frac{2.14}{\sqrt{45}} \right)$
 $10.5 \pm 2.58(3190)$
 $10.5 \pm .8231$
 (9.7, 11.31)

Apr 18-8:48 AM

25) (12, 14.8)
 $\frac{12 + 14.8}{2} = 13.4$

 $E = 1.4$

Apr 18-8:55 AM

26

 $\frac{21.61 + 30.15}{2} = 25.88$
 $25.88 - 21.61 = 4.27 \quad E$

Apr 18-8:57 AM

$$\frac{E}{z_c} = \frac{z \left(\frac{s}{\sqrt{n}} \right)}{z_c}$$

$$\frac{E}{z} = \frac{s}{\sqrt{n}}$$

$$\frac{E\sqrt{n}}{E} = \frac{s z}{E}$$

$$(\sqrt{n})^2 = \left(\frac{s z}{E} \right)^2$$

$$n = \left(\frac{s z z_c}{E} \right)^2$$

38) $C = .90 \rightarrow \frac{1-.90}{2} = .05 \quad z_c = 1.64$
 $S = 6.8$
 $E = 1 \quad \left(\frac{(1.64)(6.8)}{1} \right)^2 = n \quad \boxed{126} \leftarrow \begin{matrix} \text{Round} \\ \text{up} \end{matrix}$

Apr 18-9:01 AM

35) $\bar{x} = 452.80$
 $S = 85.50$
 $n = 34$

$C = .90 \quad z_c = 1.64$	$C = .95 \quad 1.96 = z$
$452.80 \pm 1.64 \left(\frac{85.50}{\sqrt{34}} \right)$	$452.80 \pm 1.96 \left(\frac{85.50}{\sqrt{34}} \right)$
$(428.68, 476.92)$	$(424.06, 481.54)$

Apr 18-9:08 AM