

Page 151 – Confidence Interval for the Mean With σ Known

1.	a.	$\frac{\sigma}{\sqrt{n}} = \frac{25}{\sqrt{4}} = \frac{25}{2} =$	12.50
	b.	$\frac{\sigma}{\sqrt{n}} = \frac{99}{\sqrt{49}} = \frac{99}{7} \approx$	14.14
	c.	$\frac{\sigma}{\sqrt{n}} = \frac{62}{\sqrt{50}} \approx \frac{62}{7.07} \approx$	8.77
	d.	$\frac{\sigma}{\sqrt{n}} = \frac{75}{\sqrt{25}} = \frac{75}{5} =$	15.00

5.	$\bar{X} \pm (Z) \frac{\sigma}{\sqrt{n}} = (78) \pm (1.96) \frac{4.5}{\sqrt{25}} = 78 \pm (1.96)(0.9) \approx 78 \pm 1.76 =$	(76.24, 79.76)
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Page 152 – Confidence Interval for the Mean With σ Unknown

1.	a.	$\frac{s}{\sqrt{n}} = \frac{5}{\sqrt{16}} = \frac{5}{4} =$	1.25
	b.	$\frac{s}{\sqrt{n}} = \frac{12.50}{\sqrt{25}} = \frac{12.50}{5} =$	2.50
	c.	$\frac{s}{\sqrt{n}} = \frac{18.25}{\sqrt{50}} \approx \frac{18.25}{7.07} \approx$	2.58
	d.	$\frac{s}{\sqrt{n}} = \frac{35.50}{\sqrt{30}} \approx \frac{35.50}{5.48} \approx$	6.48

5.	$\bar{X} \pm (t) \frac{s}{\sqrt{n}} = 4.4 \pm (2.06) \frac{1.75}{\sqrt{25}} = 4.4 \pm (2.06)(0.35) \approx 4.4 \pm 0.72 =$	(3.68, 5.12)
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Page 153 – Confidence Interval for the Proportion

1.	$s_p = \sqrt{\frac{p(1-p)}{n}} = \sqrt{\frac{(40\%)(1-40\%)}{200}} = \sqrt{\frac{24.00\%}{200}} = \sqrt{0.12\%} \approx 3.46\%$
	$p \pm Z(s_p) = 40\% \pm 1.96(3.46\%) \approx 40\% \pm 6.78\% =$
	(33.22%, 46.78%)

5.	$s_p = \sqrt{\frac{p(1-p)}{n}} = \sqrt{\frac{(13\%)(1-13\%)}{400}} = \sqrt{\frac{11.31\%}{400}} = \sqrt{0.03\%} \approx 1.68\%$
	$p \pm Z(s_p) = 13\% \pm 2.58(1.68\%) \approx 13\% \pm 4.33\% =$
	(8.67%, 17.33%)