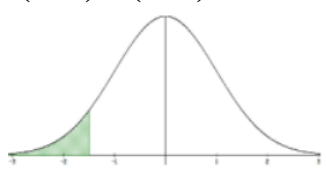
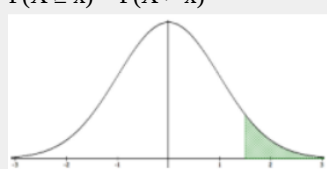
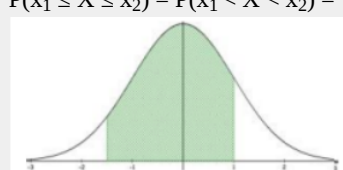
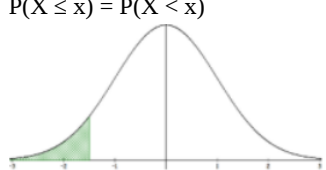
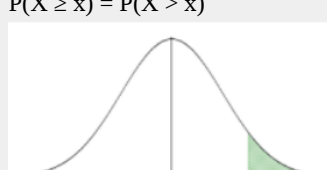
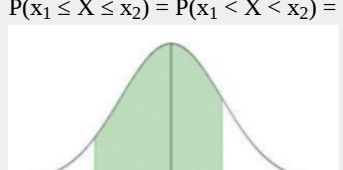


6.7: Chapter 6 Formulas

<p>Uniform Distribution</p> $f(x) = \frac{1}{b-a}, \text{ for } a \leq x \leq b$ <ul style="list-style-type: none"> $P(X \geq x) = P(X > x) = \left(\frac{1}{b-a}\right) \cdot (b-x)$ $P(X \leq x) = P(X < x) = \left(\frac{1}{b-a}\right) \cdot (x-a)$ $P(x_1 \leq X \leq x_2) = P(x_1 < X < x_2) = \left(\frac{1}{b-a}\right) \cdot (x_2 - x_1)$ 	<p>Exponential Distribution</p> $f(x) = \frac{1}{\mu} e^{\left(-\frac{x}{\mu}\right)}, \text{ for } x \geq 0$ <ul style="list-style-type: none"> $P(X \geq x) = P(X > x) = e^{-x/\mu}$ $P(X \leq x) = P(X < x) = 1 - e^{-x/\mu}$ $P(x_1 \leq X \leq x_2) = P(x_1 < X < x_2) = e^{\left(-\frac{x_1}{\mu}\right)} - e^{\left(-\frac{x_2}{\mu}\right)}$
<p>Standard Normal Distribution</p> $\mu = 0, \sigma = 1$ $z\text{-score: } z = \frac{x-\mu}{\sigma}$ $x = z\sigma + \mu$	<p>Central Limit Theorem</p> $Z\text{-score: } z = \frac{\bar{x}-\mu}{\left(\frac{\sigma}{\sqrt{n}}\right)}$
<p>Normal Distribution Probabilities:</p>	<p>$P(X \leq x) = P(X < x)$</p>  <p>Excel: =NORM.DIST(x,μ,σ,true) TI-84: normalcdf(-1E99,x,μ,σ)</p>
<p>$P(X \geq x) = P(X > x)$</p>  <p>Excel: =1-NORM.DIST(x,μ,σ,true) TI-84: normalcdf(x,1E99,μ,σ)</p>	<p>$P(x_1 \leq X \leq x_2) = P(x_1 < X < x_2) =$</p>  <p>Excel: =NORM.DIST(x2,μ,σ,true)-NORM.DIST(x1,μ,σ,true) TI-84: normalcdf(x1,x2,μ,σ)</p>
<p>Percentiles for Normal Distribution:</p>	<p>$P(X \leq x) = P(X < x)$</p>  <p>Excel: =NORM.INV(area,μ,σ) TI-84: invNorm(area,μ,σ)</p>
<p>$P(X \geq x) = P(X > x)$</p>  <p>Excel: =NORM.INV(1-area,μ,σ) TI-84: invNorm(1-area,μ,σ)</p>	<p>$P(x_1 \leq X \leq x_2) = P(x_1 < X < x_2) =$</p>  <p>Excel: $x_1 = \text{NORM.INV}((1-\text{area})/2, \mu, \sigma)$ $x_2 = \text{NORM.INV}(1-((1-\text{area})/2), \mu, \sigma)$ TI-84: $x_1 = \text{invNorm}((1-\text{area})/2, \mu, \sigma)$ $x_2 = \text{invNorm}(1-((1-\text{area})/2), \mu, \sigma)$</p>

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