6.84 $C = 90\%$, $\bar{x} = 137.0$, $s = 53.9$, $n = 50$, $t^* = 1.677$

$$\bar{x} \pm t^*\left(\frac{s}{\sqrt{n}}\right) = 137.0 \pm (1.677)\left(\frac{53.9}{\sqrt{50}}\right)$$

$$= 137.0 \pm 12.78$$

$$= 124.22 \text{ to } 149.78$$

6.86 $C = 99\%$, $\bar{x} = 88.3$, $s = 32.1$, $n = 15 \Rightarrow t^* = 2.977$

$$\bar{x} \pm t^*\left(\frac{s}{\sqrt{n}}\right) = 88.3 \pm (2.977)\left(\frac{32.1}{\sqrt{15}}\right)$$

MOE

$$= 88.3 \pm 24.67$$

$$= 63.63 \text{ to } 112.97$$

6.94 $n = 50$, $\bar{x} = 3.1$ mm, $s = .72$, $C = 95\%$. $\Rightarrow t^* = 2.01$

$$3.1 \pm \underbrace{(2.01)\left(\frac{.72}{\sqrt{50}}\right)}_{.205} = 2.895 \text{ to } 3.305$$

6.118 $H_0: \mu = 4$ vs. $H_a: \mu \neq 4$

$\bar{x} = 4.8$

$s = 2.3$

$n = 15$

$$t = \frac{\bar{x} - \mu}{\frac{s}{\sqrt{n}}} = \frac{4.8 - 4}{\frac{2.3}{\sqrt{15}}}$$

$$= 1.347 \Rightarrow \text{p-value} = .2 = 20\%.$$

6.126 $H_0: \mu = 634$ vs $H_a: \mu \neq 634$

$\bar{x} = 669.5, \; s = 248, \; n = 1200$

$$t = \frac{669.5 - 634}{\frac{248}{\sqrt{1200}}} = 4.959 \Rightarrow \text{p-value} = .112$$

6.127 $H_0: \mu = 8$ vs. $H_a: \mu < 8$

$\bar{x} = 6.2, \; s = 1.7, \; n = 12$

$$t = \frac{6.2 - 8}{\frac{1.7}{\sqrt{12}}} = -3.67 \Rightarrow \text{p-value} = .0018$$