[Give critical values $t_{\alpha/2}$ to 3 decimal places.]

1. Given a confidence level of 95%,

(a). Sketch a picture and determine the value of $\alpha/2$.

(b). Use `invT` to find the critical value $t_{\alpha/2}$ for a 95% confidence level and the following sample sizes.

(***i***) Sample size $n = 25$ $t_{.025} = 2.064$

(***ii***) Sample size $n = 50$ $t_{.025} = 2.010$

(***iii***) Sample size $n = 100$ $t_{.025} = 1.984$

(***iv***) Sample size $n = 200$ $t_{.025} = 1.972$

2. Given a confidence level of 90%,

(a). Sketch a picture and determine the value of $\alpha/2$.

(b). Use `invT` to find the critical value $t_{\alpha/2}$ for a 90% confidence level and the following sample sizes.

(***i***) Sample size $n = 48$ $t_{.05} = 1.678$

(***ii***) Sample size $n = 182$ $t_{.05} = 1.653$

3. Given a confidence level of 99%,

(a). Sketch a picture and determine the value of $\alpha/2$.

(b). Use `invT` to find the critical value $t_{\alpha/2}$ for a 99% confidence level and the following sample sizes.

(***i***) Sample size $n = 64$ $t_{.005} = 2.656$

(***ii***) Sample size $n = 256$ $t_{.005} = 2.595$