Homework 4.2

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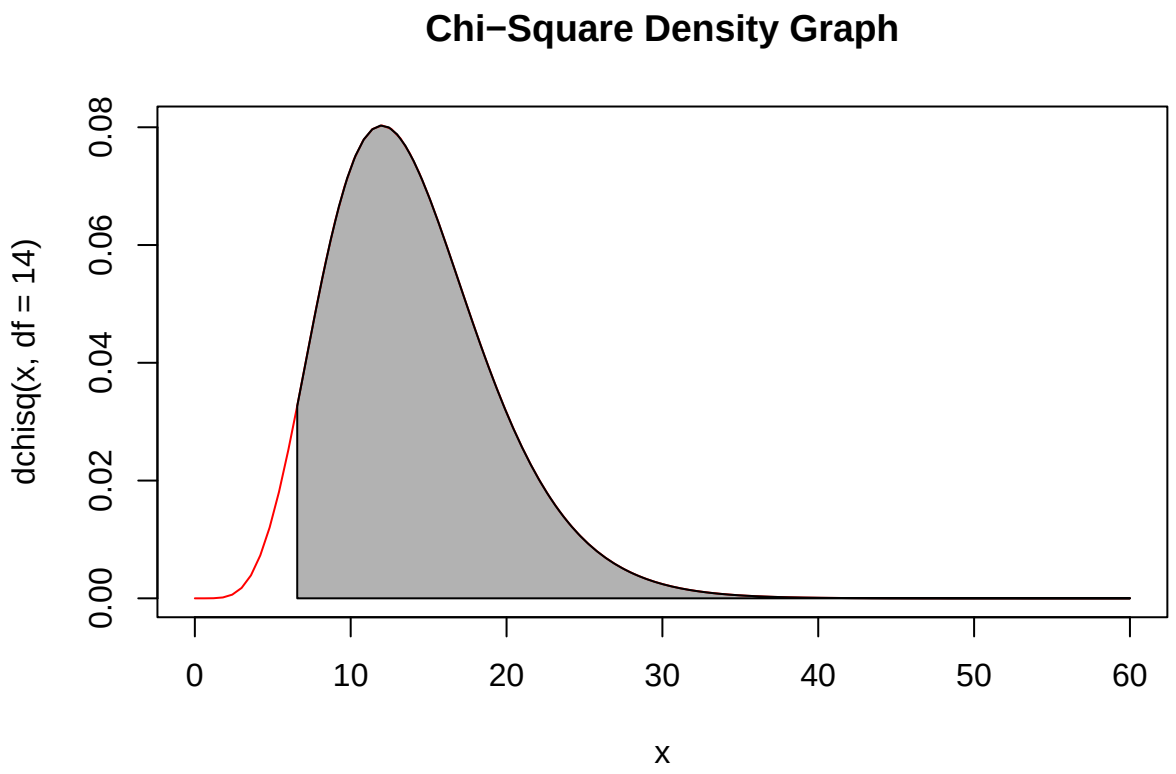
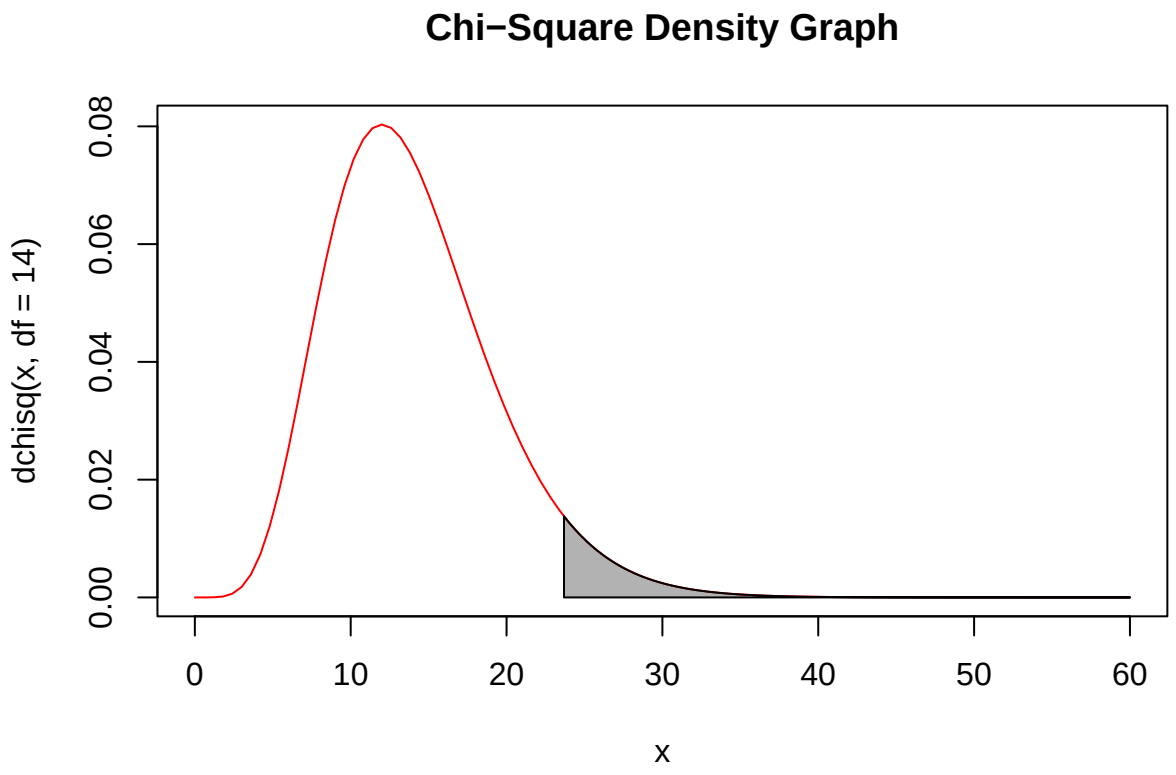
Exercise 5.18 (a) mu =14 var=28 (b) a=6.57 b=23.6868 c=29.1612 d=6.5705 e=23.6845 (c) $\chi^2_{14,.95}$ $\chi^2_{14,.05}$ $\chi^2_{14,.01}$ $(\chi^2_{14,.95}, \chi^2_{14,.05})$

(d)

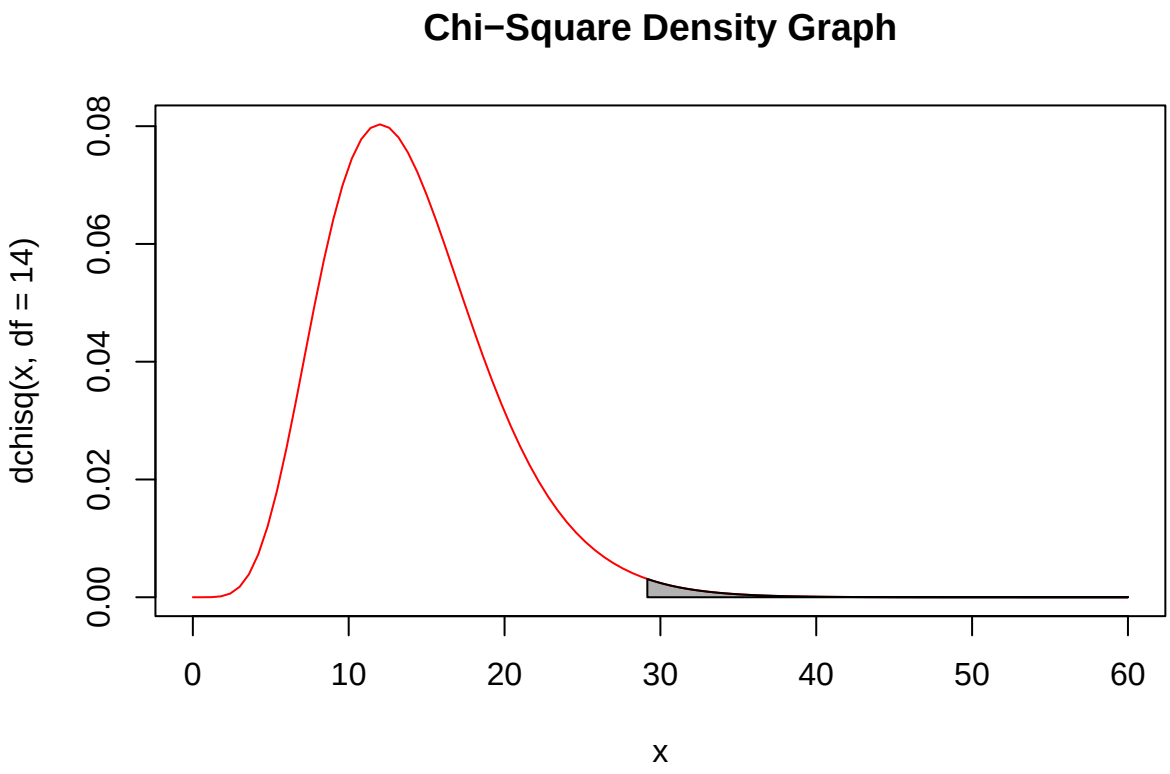
```
curve( dchisq(x, df=14), col='red', main = "Chi-Square Density Graph",
          from=0,to=60)
xvec <- seq(6.57,60,length=101)
pvec <- dchisq(xvec,df=14)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```



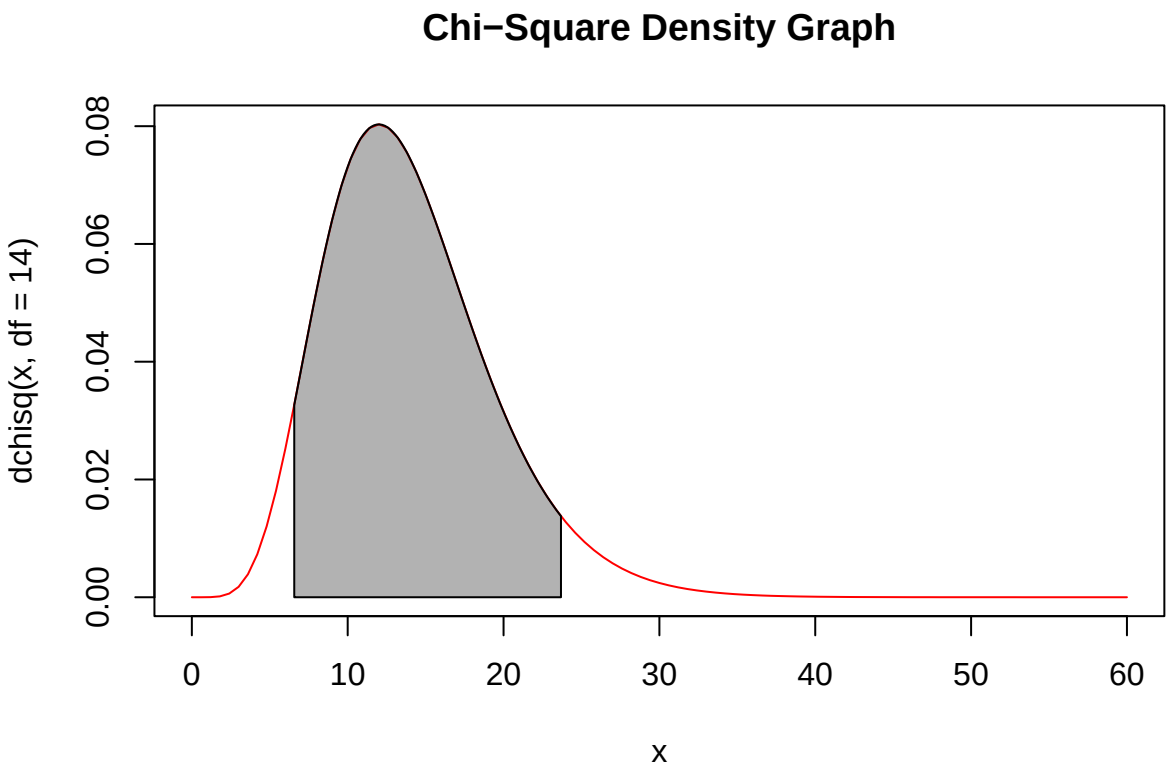
```
curve( dchisq(x, df=14), col='red', main = "Chi-Square Density Graph",
          from=0,to=60)
xvec <- seq(23.686,60,length=101)
pvec <- dchisq(xvec,df=14)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```




```
curve( dchisq(x, df=14), col='red', main = "Chi-Square Density Graph",
          from=0,to=60)
xvec <- seq(29.1612,60,length=101)
pvec <- dchisq(xvec,df=14)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```




```
curve( dchisq(x, df=14), col='red', main = "Chi-Square Density Graph",
          from=0,to=60)
xvec <- seq(6.5705,23.6845,length=101)
pvec <- dchisq(xvec,df=14)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```



Exercise 5.20

```
pchisq(2,df=7)
```

```
## [1] 0.04015963
```

```
pchisq(2,df=16)
```

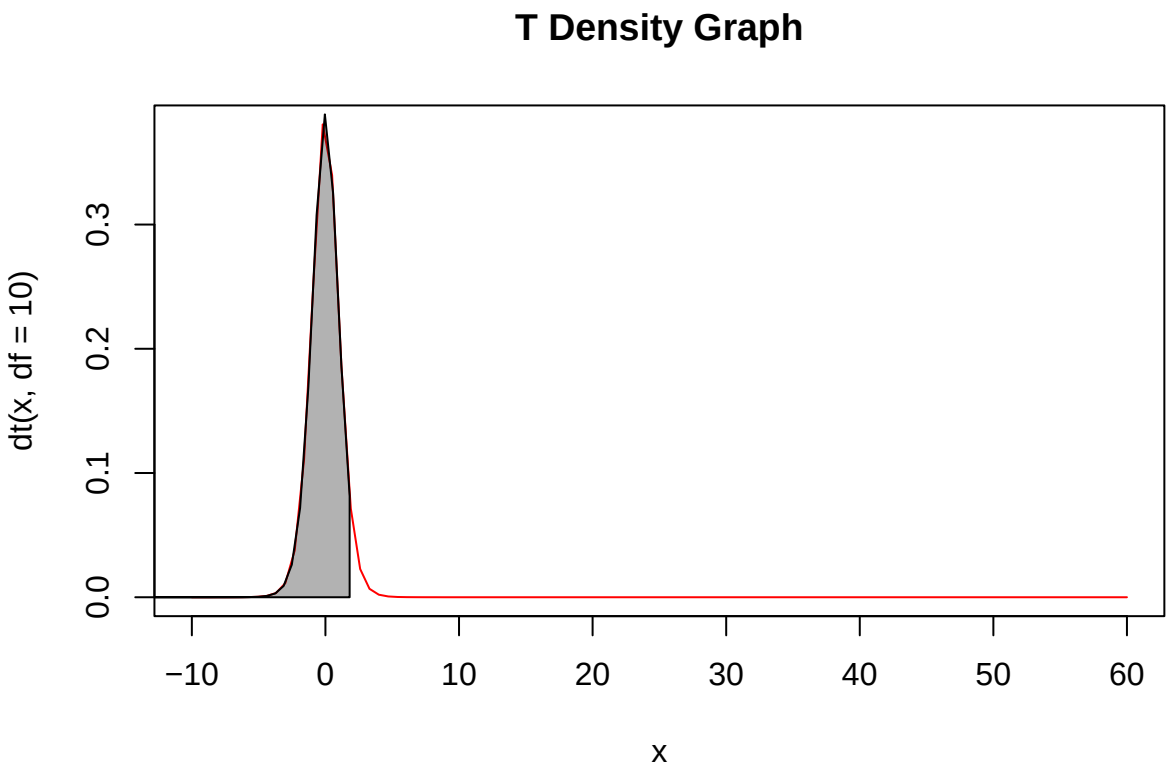
```
## [1] 1.02492e-05
```

```
pchisq(2,df=21)
```

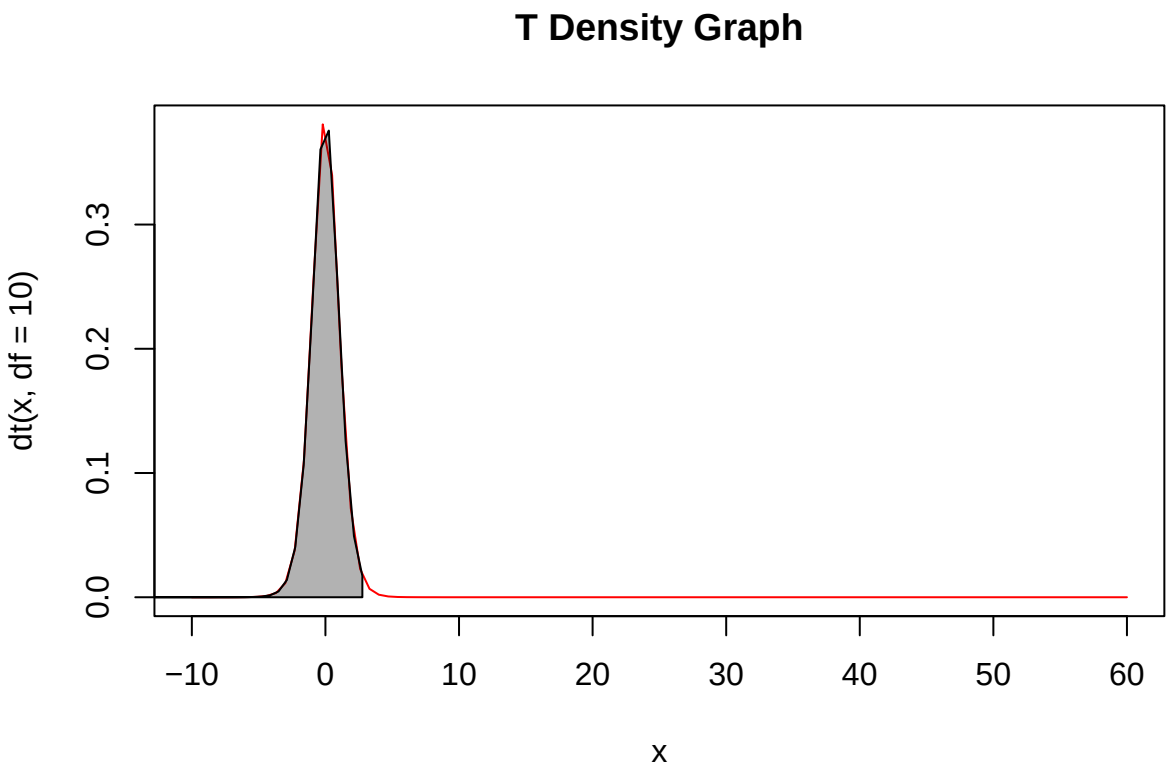
```
## [1] 3.383623e-08
```

This is incredibly unlikely Exercise 5.23 (a) $19c^{20} = \chi^2_{19,.10} = 27.203$ $c = 1.197$ (b) 5c=6 Not 5 degrees farenheit Exercise 5.25 (a) a=1.812 b=-2.764 c=1.472 d=2.228 (b) $a = t_{10,.05}$ $b = t_{10,.01}$ $c = t_{10,.10}$ $d = t_{10,.025}$ (c)

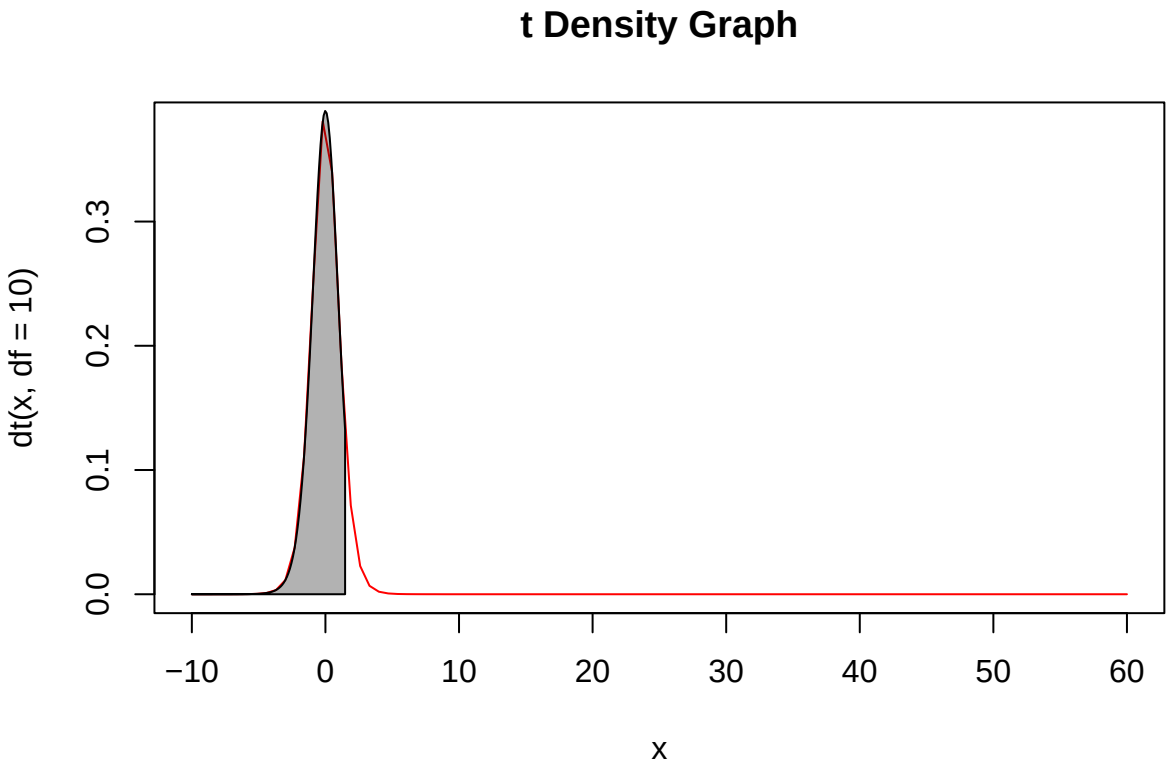
```
curve( dt(x, df=10), col='red', main = "T Density Graph",
          from=-10,to=60)
xvec <- seq(-60,1.812,length=101)
pvec <- dt(xvec,df=10)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```



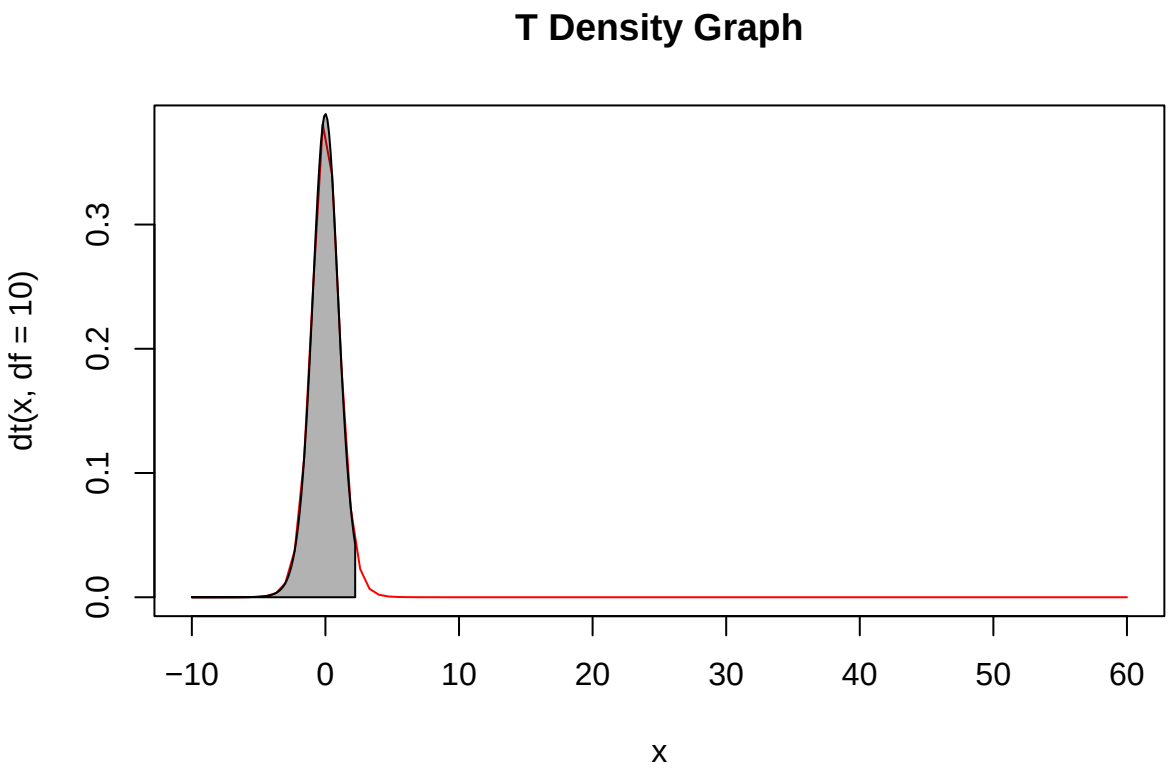

```
curve( dt(x, df=10), col='red', main = "T Density Graph",
          from=-10,to=60)
xvec <- seq(-60,2.764,length=101)
pvec <- dt(xvec,df=10)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```




```
curve( dt(x, df=10), col='red', main = "t Density Graph",
          from=-10,to=60)
xvec <- seq(-10,1.472,length=101)
pvec <- dt(xvec,df=10)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```




```
curve( dt(x, df=10), col='red', main = "T Density Graph",
          from=-10,to=60)
xvec <- seq(-10,2.228,length=101)
pvec <- dt(xvec,df=10)
polygon(c(xvec,rev(xvec)),c(pvec,rep(0,length(pvec))),
        col=adjustcolor("black",alpha=0.3))
```



Exercise 5.31 $F_{v1,v2} = \frac{\chi^2_{v1}/v1}{\chi^2_{v2}/v2}$ $1/F_{v1,v2} = \frac{\chi^2_{v2}/v2}{\chi^2_{v1}/v1}$ $F_{v1,v2,1-\alpha} = \frac{1}{F_{v2,v1,\alpha}}$ Exercise 5.33 .142 .008 .498