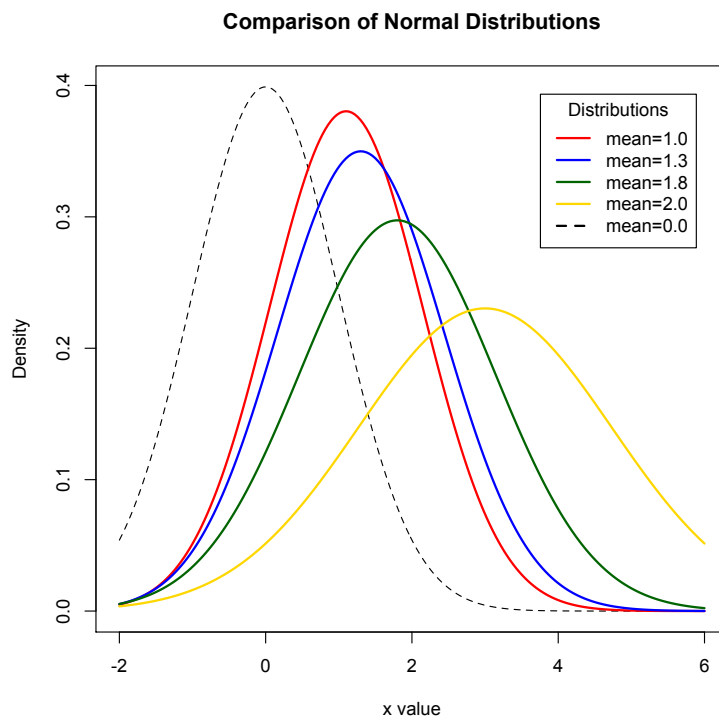


Density Functions by R

Normal distribution

```
# Display the normal distributions with various
# means and compare to the standard normal distribution

x <- seq(-2, 6, length=200)
hx <- dnorm(x)
degf <- c(1.1, 1.3, 1.8, 3.0)
colors <- c("red", "blue", "darkgreen", "gold", "black")
labels <- c("mean=1.0", "mean=1.3", "mean=1.8", "mean=2.0", "mean=0.0")
plot(x, hx, type="l", lty=2, xlab="x value",
     ylab="Density", main="Comparison of Normal Distributions")
for (i in 1:4){
  lines(x, dnorm(x,mean=degf[i], sd=sqrt(degf[i])), lwd=2, col=colors[i])
}
legend("topright", inset=.05, title="Distributions",
      labels, lwd=2, lty=c(1, 1, 1, 1, 2), col=colors)
```



T-distribution

```
# Display the Student t-distributions with various
# degrees of freedom and compare to the standard normal distribution
```

```

x <- seq(-6, 6, length=100)
hx <- dnorm(x)

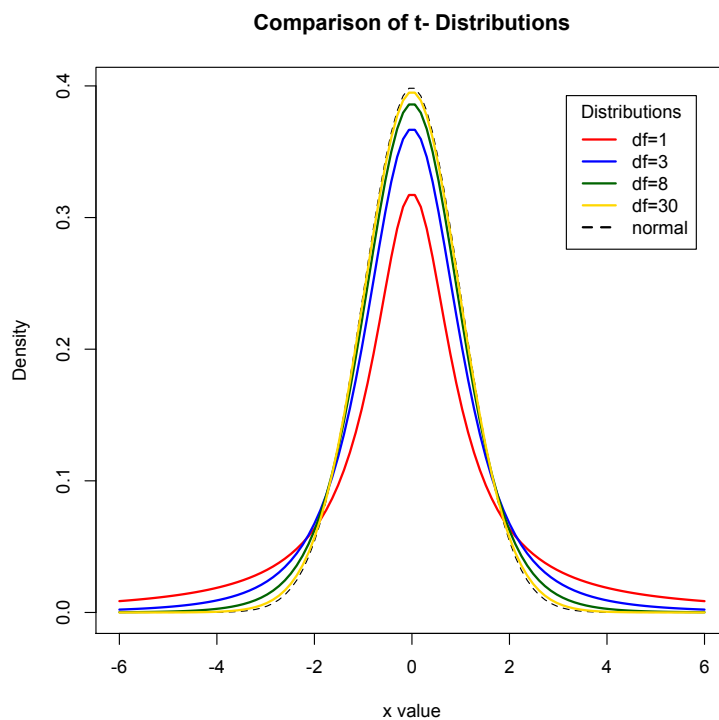
degf <- c(1, 3, 8, 30)
colors <- c("red", "blue", "darkgreen", "gold", "black")
labels <- c("df=1", "df=3", "df=8", "df=30", "normal")

plot(x, hx, type="l", lty=2, xlab="x value",
     ylab="Density", main="Comparison of t- Distributions")

for (i in 1:4){
  lines(x, dt(x,degf[i]), lwd=2, col=colors[i])
}

legend("topright", inset=.05, title="Distributions",
      labels, lwd=2, lty=c(1, 1, 1, 1, 2), col=colors)

```



Chi-Square distribution

Display the Chi-Square distributions with various
degrees of freedom and compare to the standard normal distribution

```

x <- seq(0, 60, length=1000)
hx <- dnorm(x)

```

```

degf <- c(1, 3, 8, 30)
colors <- c("red", "blue", "darkgreen", "gold", "black")
labels <- c("df=1", "df=3", "df=8", "df=30", "normal")

plot(x, hx, type="l", lty=2, xlab="x value",
     ylab="Density", main="Comparison of Chi-Square Distributions")

for (i in 1:4){
  lines(x, dchisq(x,degf[i]), lwd=2, col=colors[i])
}

legend("topright", inset=.05, title="Distributions",
      labels, lwd=2, lty=c(1, 1, 1, 1, 2), col=colors)

```

