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## 1. Algunas distribuciones de probabilidad

```
``` {r}
print("Problma 1:")
miu = 10
sigma = 2
x = seq(miu - 4*sigma, miu + 4*sigma, 0.01)
y = dnorm(x,miu, sigma)
plot(x,y, type = "l", col = "red", main = "Normal(10,2)")
```

```{r}
print("Problema 2:")
gl = 12 # Grados de libertad
sigma = sqrt(gl/(gl-2))
x = seq( -4*sigma, 4*sigma, 0.01)
y = dt(x,gl)
plot(x,y, type = "l", col = "blue", main = "T Student con gl = 12")
```

``` {r}
print("Problema 3:")
gl = 8
sigma = sqrt(2*gl)
x = seq( 0, miu + 8*sigma, 0.01)
y = dchisq(x,gl)
plot(x,y, type = "l", col = "green", main = "Chi2 con gl = 8")
```

``` {r}
print("Problema 4:")
v1 = 9
v2 = 13
sigma = sqrt(2)*v2*sqrt(v2+v1-2)/(sqrt(v2-4)*(v2-2)*sqrt(v1))
x = seq( 0, miu + 8*sigma, 0.01)
y = df(x,v1, v2)
plot(x,y, type = "l", col = "red", main = "F con v1 = 9, v2 = 13")
```

```{r}
print("Problema 5:")
a <- 1-pnorm(0.7)
b <- pnorm(0.7)
c <- 0

print(paste("a) ", a))
print(paste("b) ", b))
print(paste("c) ", c))
```

```{r}
print("Problema 6:")
z <- qnorm(.45)
print(paste("Z = ", z))
```

```{r}
print("Problema 7:")
miu <- 100
sigma <- 7
```

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a <- pnorm(87,miu,sigma)
b <- 1 - pnorm(87,miu,sigma)
c <- pnorm(110,miu,sigma) - pnorm(87,miu,sigma)
print(paste("a: ",a))
print(paste("b: ",b))
print(paste("c: ",c))
```

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```{r}
print("Problema 8:")
gl = 10
a <- pt(0.5,gl)
b <- 1 - pt(1.5,gl)
t <- qt(0.05,gl)
print(paste("a: ",a))
print(paste("b: ",b))
print(paste("t: ",t))
```

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```{r}
print("Problema 9:")
gl = 6
a <- pchisq(3,gl)
b <- 1 - pchisq(2,gl)
c <- qchisq(0.95,gl)
print(paste("a: ",a))
print(paste("b: ",b))
print(paste("c: ",c))
```

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```{r}
print("Problema 10:")
v1 = 8
v2 = 10
a <- pf(2,v1,v2)
b <- 1 - pf(3,v1,v2)
c <- qf(0.25,v1,v2)
print(paste("a: ",a))
print(paste("b: ",b))
print(paste("c: ",c))
```

```

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```{r}
print("Problema 11:")
media = 65
desvEst = 20
tiempo = 60
a <- pnorm(tiempo, media, desvEst)
porcentaje <- a * 100
print(paste("Porcentaje: ",format(porcentaje, digits = 4),"%"))
```

```