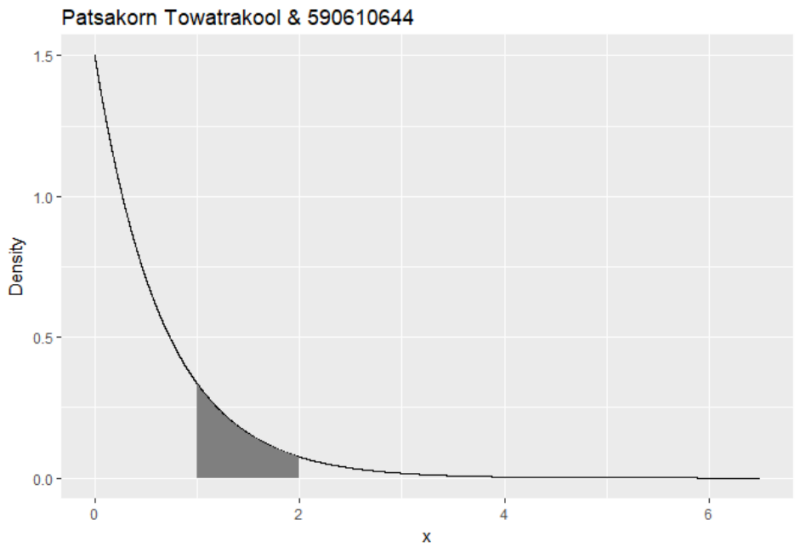
Homework 1 590610644

```
require(ggplot2)

# 1

x <- seq(0, 6.5, length.out = 10000)

den <- dexp(x, rate = 1.5)

df <- data.frame(x = x, y = den)



pos1To2Seq <- seq(from = 1, to = 2, by = 0.01)

pos1To2 <-  data.frame(x = pos1To2Seq,

                       y = dexp(pos1To2Seq, rate = 1.5))

pos1To2 <- rbind(c(min(pos1To2$x), 0),

          pos1To2,

          c(max(pos1To2$x),0))



p <- ggplot(df, aes(x = x)) +

 geom_line(aes(y = den)) +

 ggtitle('Patsakorn Towatrakool & 590610644') +

 labs(x='x', y='Density')



p + geom_polygon(data = pos1To2, aes(x = x, y = y), fill = "grey50")
```

```
# 2

pexp(2, rate=1.5) - pexp(1, rate=1.5)
```

```
require(ggplot2)

# 1
x <- seq(0, 6.5, length.out = 10000)
den <- dexp(x, rate = 1.5)
df <- data.frame(x = x, y = den)

pos1To2Seq <- seq(from = 1, to = 2, by = 0.01)
pos1To2 <-  data.frame(x = pos1To2Seq, y = dexp(pos1To2Seq, rate = 1.5))
pos1To2 <- rbind(c(min(pos1To2$x), 0),
                 pos1To2,
                 c(max(pos1To2$x),0))

p <- ggplot(df, aes(x = x)) +
  geom_line(aes(y = den)) +
  ggtitle('Patsakorn Towatrakool & 590610644') +
  labs(x='x', y='Density')

p + geom_polygon(data = pos1To2, aes(x = x, y = y), fill = "grey50")

# 2
pexp(2, rate=1.5) - pexp(1, rate=1.5)
```




```
> pexp(2, rate=1.5) - pexp(1, rate=1.5)
[1] 0.1733431
```