Homework 1

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Problem 1

a)

```
a<-seq(513,585,9)
print(a)
```

```
## [1] 513 522 531 540 549 558 567 576 585
```

b)

```
b<-rep("1st",5)
print(b)
```

```
## [1] "1st" "1st" "1st" "1st" "1st"
```

c)

```
c<-seq(37,52,1)
print(c)
```

```
##  [1] 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
```

d)

```
x<-rep("1st",3)
y<-rep("2nd",3)
z<-rep("3rd",3)
d<-c(x,y,z)
print(d)
```

```
## [1] "1st" "1st" "1st" "2nd" "2nd" "2nd" "3rd" "3rd" "3rd"
```

e)

```
e<-seq(155,135,-4)
print(e)
```

```
## [1] 155 151 147 143 139 135
```

f)

```
x<-seq(50,100,10)
y<-seq(95,75,-5)
f<-c(x,y)
print(f)
```

```
##  [1]  50  60  70  80  90 100  95  90  85  80  75
```

g)

```
a<-rep(20,4)
b<-rep(30,3)
c<-rep(40,2)
d<-50
g<-c(a,b,c,d)
print(g)
```

```
##  [1] 20 20 20 20 30 30 30 40 40 50
```

h)

```
x<-seq(2,0,-1)
h<-rep(x,5)
print(h)
```

```
##  [1] 2 1 0 2 1 0 2 1 0 2 1 0 2 1 0
```

i)

```
x<-seq(124,68,-8)
y<-seq(63,38,-5)
print(c(x,y))
```

```
##  [1] 124 116 108 100  92  84  76  68  63  58  53  48  43  38
```

j)

```
x<-c("3rd","2nd","1st")
print(rep(x,2))
```

```
## [1] "3rd" "2nd" "1st" "3rd" "2nd" "1st"
```

Problem 2

a)

```
print(pnorm((29.43-63)/12))
```

```
## [1] 0.002574988
```

b)

```
x<-(12*(qnorm(0.05)))+63
print(x)
```

```
## [1] 43.26176
```

c)

```
print((1-pnorm((90-63)/12))*28000)
```

```
## [1] 342.2852
```

Problem 3

a)

```
print(1-pbinom(1, size=10, prob=0.1) + dbinom(1,10,0.1))
```

```
## [1] 0.6513216
```

b)

```
data<-{1:10}

print(round(dbinom(data[],10,0.1),digit=3))
```

```
##  [1] 0.387 0.194 0.057 0.011 0.001 0.000 0.000 0.000 0.000 0.000
```

c)

```
row1<-round(1:10,digits = 2)
row2<-round(dbinom(row1[],10,0.1),digit=3)
matrix<-rbind(row1,row2)
```

d)

```
row1<-round(1:10)
probVector<-round(dbinom(row1[],10,0.1),digit=3)
matrix<-rbind(row1,probVector)
#labelsVector <- set_label(probVector, "P(X=x)")
#print(labelsVector)
```

e)

The labelled vector created in d is easier to read as the label describes what the numeric values in the row represent. ### f)

```
#row1<-round(1:10)
#probVector<-round(dbinom(row1[],10,0.1),digit=3)
#matrix<-rbind(row1,probVector)6n
#labelsVector <- set_label(probVector, "P(X=x)")
#probabilities <- data.frame( LabelledProbabilityVector = labelsVector,probabilities =pr
#print(probabilities)
```

g)

```
probabilitiesOnly <- data.frame(probabilities =probVector)
```

h)

data Frame created in g is a better representation as it is more efficient way of representing the probability rather than create a labeled vector and a normal vector with the probabilities I am able to label the column so that I can see what my column represents.

Problem 4

a)

```
Name<-"Gretchen Martinet"
Department<-"Statistics"
Course1<-"STAT 3080"
Course2<-"STAT 2559"
```

```
Courses<-c(Course1,Course2)
ActiveTeach<-c(Course1 = TRUE,Course2 = FALSE)
Enr<-(Courses)
EnrCourse1<-c(75,90,90)
EnrCourse2<-(5)

Daysrow1<-c("Monday", "Wednesday")
Daysrow2<-c("Tuesday","Thursday")
Daysrow3<-c("Tuesday","Thursday")
Days<-rbind(Daysrow1,Daysrow2,Daysrow3)
#course1daysLabel1<-set_label(Course1,Days)
#course2daysLabel2<-set_label(Course2,Daysrow2)
```

References

1. Your resources go here. Links should be surrounded by <>.