ASSIGNMENT 3

Probability and Statistics

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COE11

Q1

```
dbinom(7, size = 12, prob=1/6) + dbinom(8, size = 12, prob=1/6) + dbinom(9, size = 12, prob=1/6)
pbinom(9, size = 12, prob=1/6) - pbinom(7, size = 12, prob=1/6)
```

Output:

```
> dbinom(7, size = 12, prob=1/6) + dbinom(8, size = 12, prob=1/6) + dbinom(9, size = 12, prob=1/6)
[1] 0.001291758
> pbinom(9, size = 12, prob=1/6) - pbinom(7, size = 12, prob=1/6)
[1] 0.0001547582
```

Q2

```
prob = pnorm(84,72,15.2,lower.tail=FALSE)  #For greater than - False
perc = prob*100
perc
```

Output:

```
> pnorm(84,72,15.2,lower.tail=FALSE)  #For greater than - False
[1] 0.2149176
> prob = pnorm(84,72,15.2,lower.tail=FALSE)  #For greater than - False
> perc = prob*100
> perc
[1] 21.49176
```

Q3

```
ppois(0,5)
ppois(50,50)-ppois(47,50)
```

Output:

```
> ppois(0,5)
[1] 0.006737947
> ppois(50,50)-ppois(47,50)
[1] 0.1678485
>
```

Q4

```
Source on Save
1  dhyper(3,17,233,5)
```

Output:

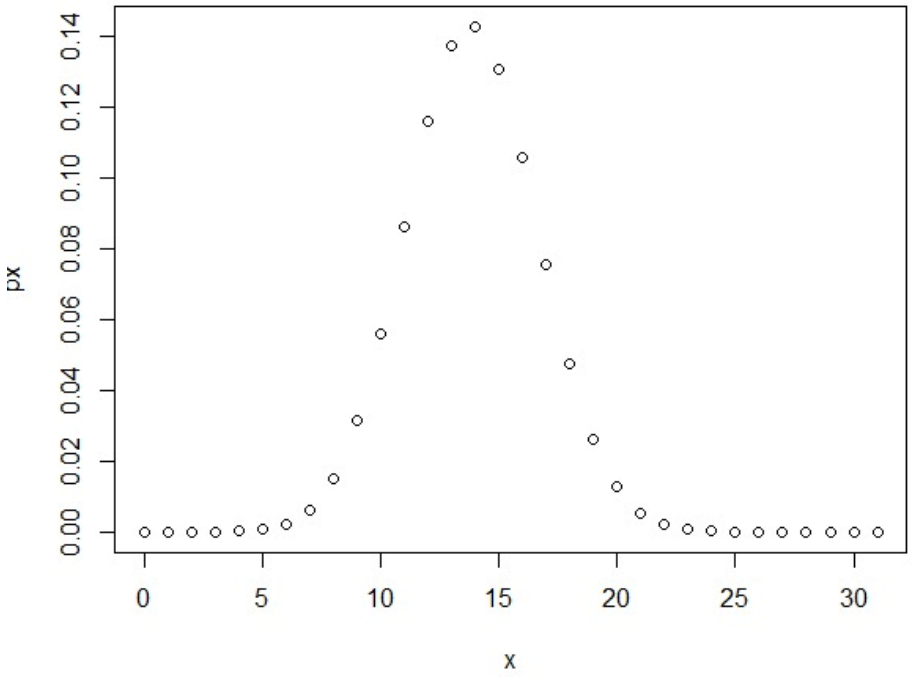
```
~/
> dhyper(3,17,233,5)
[1] 0.002351153
>
```

Q5

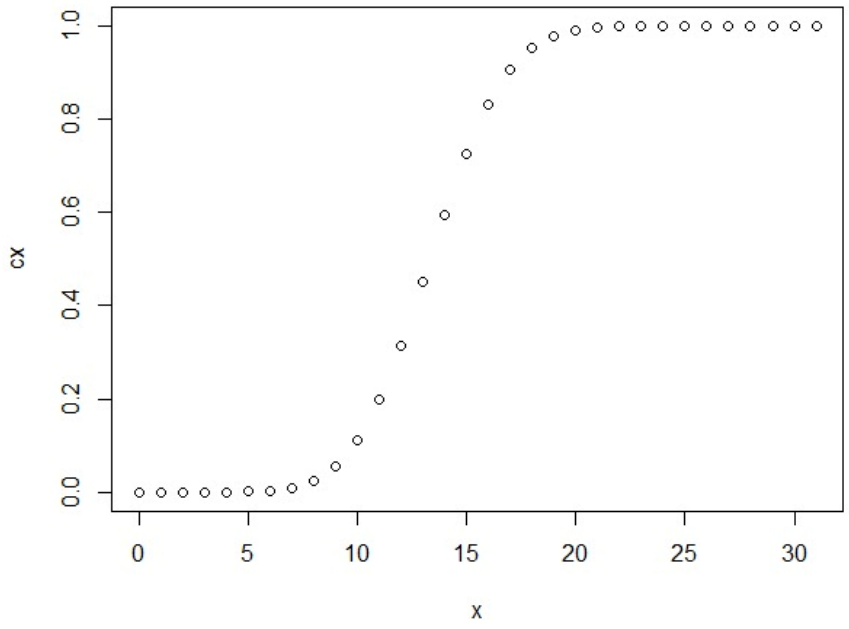
```
Source on Save
1  x=c(0:31)
2  px=dbinom(x,31,0.447)
3  plot(x,px)
4
5  cx=pbinom(x,31,0.447)
6  plot(x,cx)
7
8  mean=sum(x*px)
9  varx=sum((x-mean)^2*px)
10 varx
11 sdx=sqrt(varx)
12 sdx
13
```

Output:

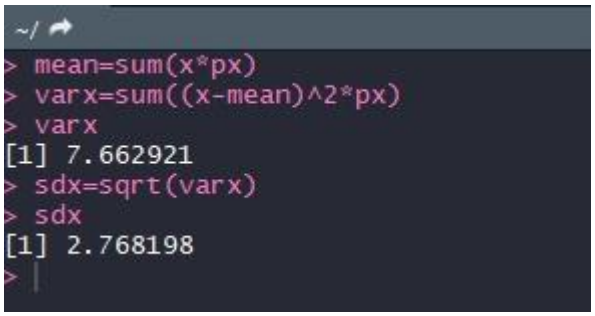
Q5(a)



Q5(b)



Q5(c)


~/
> mean=sum(x*px)
> varx=sum((x-mean)^2*px)
> varx
[1] 7.662921
> sdx=sqrt(varx)
> sdx
[1] 2.768198
>