

1.)

```
ExactPD(20, 40, 19/40);  
[0.1190277811, 304.7777751]
```

(i) K=100,

```
EstPD(20, 40, 19/40, 100);  
[0.1100000000, 292.0600000]
```

(ii) K=1000

```
EstPD(20, 40, 19/40, 1000);  
[0.1310000000, 308.3000000]
```

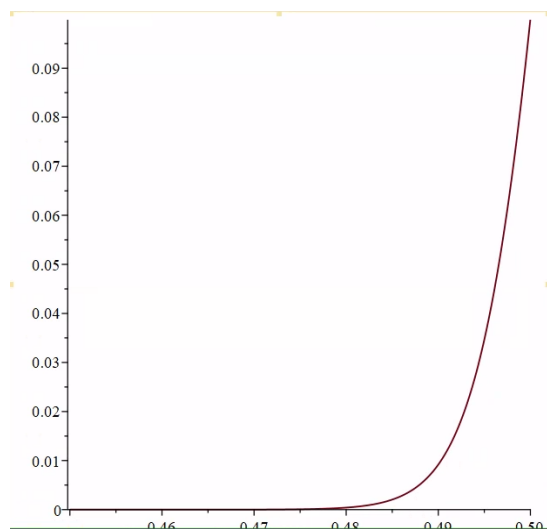
(iii) K=5000

```
EstPD(20, 40, 19/40, 5000);  
[0.1234000000, 307.1728000]
```

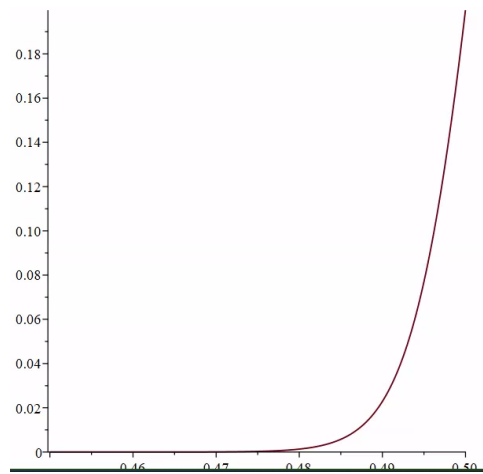
The estimate with the biggest k, in this case when $k = 5000$, should give the best estimate. In my results, this was also shown to be true. This is because, as the number of iterations increases, the variability is accounted for, and it gets closer to the real value.

2.)

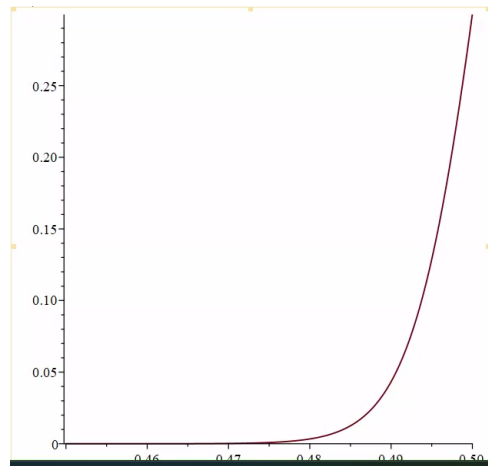
```
plot(ForPD(10, 100, p)[1], p = 0.45 .. 0.5)
```



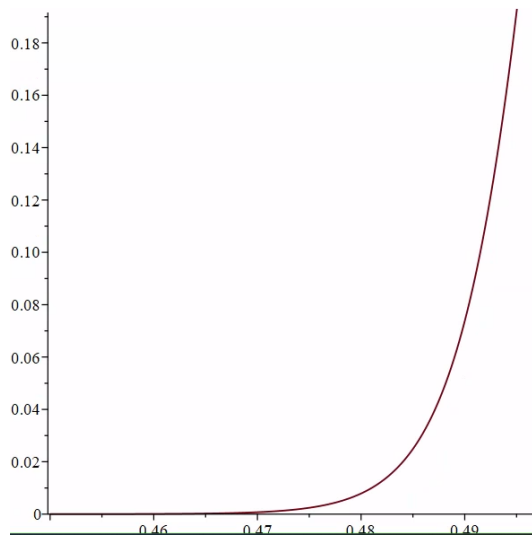
plot(ForPD(20, 100, p)[1], p = 0.45 .. 0.5)



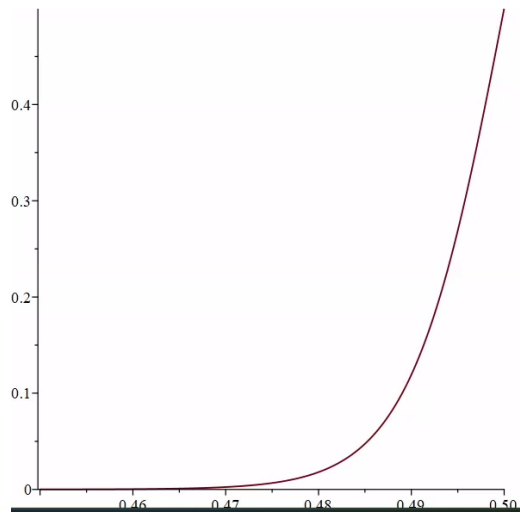
plot(ForPD(30, 100, p)[1], p = 0.45 .. 0.5)



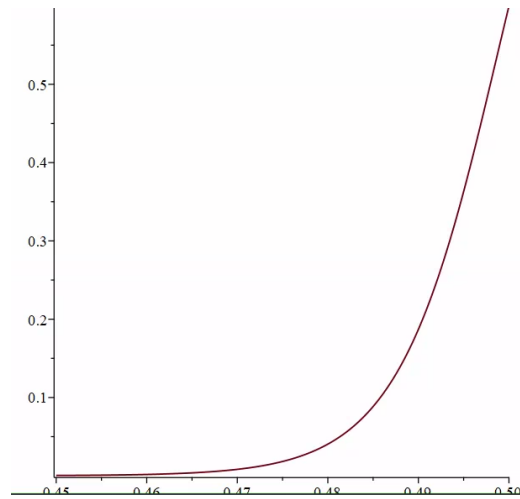
plot(ForPD(40, 100, p)[1], p = 0.45 .. 0.5)



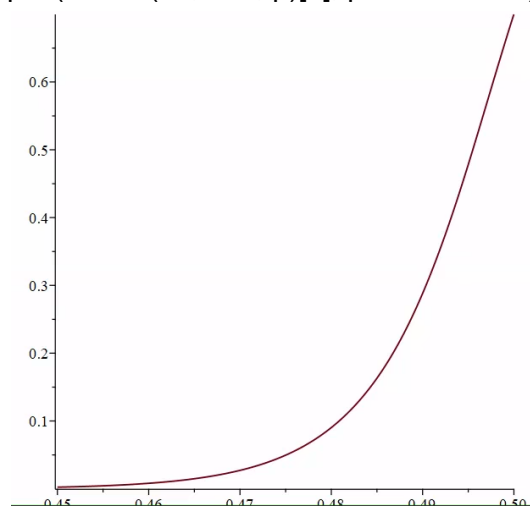
plot(ForPD(50, 100, p)[1], p = 0.45 .. 0.5)



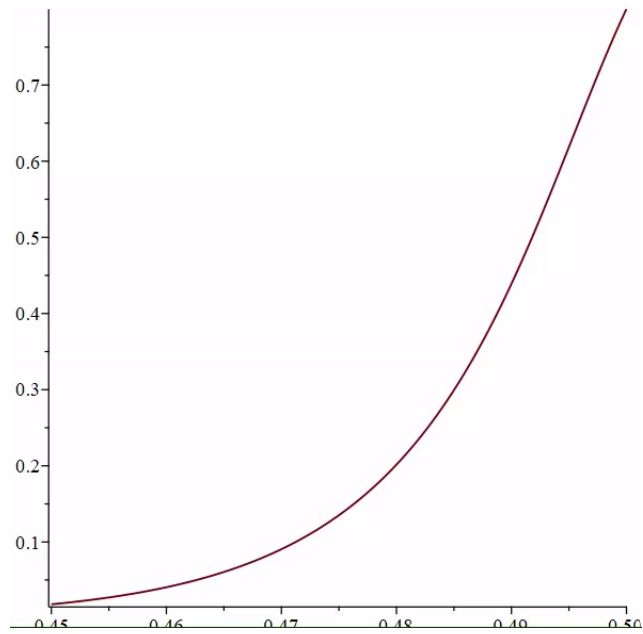
plot(ForPD(60, 100, p)[1], p = 0.45 .. 0.5)



plot(ForPD(70, 100, p)[1], p = 0.45 .. 0.5)



plot(ForPD(80, 100, p)[1], p = 0.45 .. 0.5)



plot(ForPD(90, 100, p)[1], p = 0.45 .. 0.5)

