HW2 KEY

40 points total, 2 points per problem part unless otherwise noted.

Q1 Standard Normal Distribution

```
#1A
pnorm(0.64)
```

```
## [1] 0.7389137
```

```
#1B
pnorm(-0.37)
```

```
## [1] 0.3556912
```

```
#1C
1-pnorm(1.24)
```

```
## [1] 0.1074877
```

```
#1D
pnorm(1.15) - pnorm(-0.37)
```

```
## [1] 0.5192368
```

```
#1E
qnorm(0.3300)
```

```
## [1] -0.4399132
```

```
#1F
qnorm((1-0.1841))
```

```
## [1] 0.8998502
```

Q2 Normal Distribution

```
#2A
pnorm(5.7, mean = 5.4, sd = 0.2)
```

```
## [1] 0.9331928
```

```
#2B
1-pnorm(5.3, mean = 5.4, sd = 0.2)
```

```
## [1] 0.6914625
```

```
#2C
pnorm(5.5, mean = 5.4, sd = 0.2) - pnorm(5.2, mean = 5.4, sd = 0.2)
```

```
## [1] 0.5328072
```

```
#2D
qnorm(0.85, mean = 5.4, sd = 0.2)
```

```
## [1] 5.607287
```

Q3 Skewed Distribution

3A. Chebyshev: (70, 90)

3B. **(3pts)** Mean = 80, standard deviation = 0.5, approximately normal based on the Central Limit theorem.

Q4 Seeds

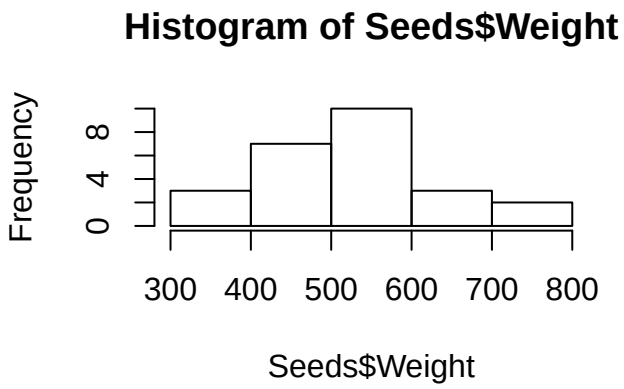
```
Seeds<-read.csv("C:/hess/STAT511_FA11/HW_2019/HW2/Seeds.csv")
#4A (3pts)
mean(Seeds$Weight)
```

```
## [1] 526.12
```

```
sd(Seeds$Weight)
```

```
## [1] 113.7279
```

```
hist(Seeds$Weight)
```



4B. 95% CI = (479.18, 573.06)

4C. We can be 95% confident that the true population mean is between 479.1 and 573.1.

4D. The data appears to be close to normal, hence the CI is valid (even though the sample size is moderate).

Q5 CIs

5A. Decrease

5B. Increase

5C. Increase