HW 10.31

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Problem 1

a.)

```
1 - pnorm(.650, 0.620, .165)
```

```
[1] 0.4278627
```

b.)

```
1 - pnorm(0.650, 0.620, 0.165 / sqrt(10))
```

```
[1] 0.2826593
```

c.)

```
1 - pnorm(0.650, 0.620, 0.165 / sqrt(50))
```

```
[1] 0.09928285
```

d.)

```
1 - pnorm(0.650, 0.620, 0.165 / sqrt(500))
```

```
[1] 2.395677e-05
```

Problem 2

a.)

i.)

```
1 - pnorm(3.20, 3.49, 1.14)
```

```
[1] 0.6004013
```

ii.)

```
1 - pnorm(3.20, 3.49, 1.14/sqrt(20))
```

```
[1] 0.8723664
```

b.)

Notes From the YT Video

- `μ` is the mean of the population
- `x` is the mean of the sample
- `z*` is the Z score of the desired Confidence Interval usually 0.90, 0.95 and 0.99
- σ is the Standard deviation of the sample
- `n` is the sample size