6.3

2

$$H_0 : p > .60, H_1 : p \leq .60$$

$$\hat{p} = \frac{281}{444} = .633, p_0 = .6$$

$$\begin{aligned} Z &= \frac{\hat{p} - p_0}{\sqrt{p_0(1 - p_0)/n}} \\ &= \frac{.633 - .6}{\sqrt{.6(1 - .6)/444}} \\ &= 1.42 \\ &\Rightarrow \\ P &= .9222 \end{aligned}$$

There for one could conclude that more than 60

4

$$H_0 : p > \geq .50, H_1 < 50$$
$$\hat{p} = \frac{49}{73} = .671, p_0 = .6$$

$$\begin{aligned} Z &= \frac{\hat{p} - p_0}{\sqrt{p_0(1 - p_0)/n}} \\ &= \frac{.671 - .6}{\sqrt{.6(1 - .6)/73}} \\ &= 1.238 \\ &\Rightarrow \\ P &= .8907 \end{aligned}$$

There for one could conclude that more than 60

6.4

2

a the assumptions are not met

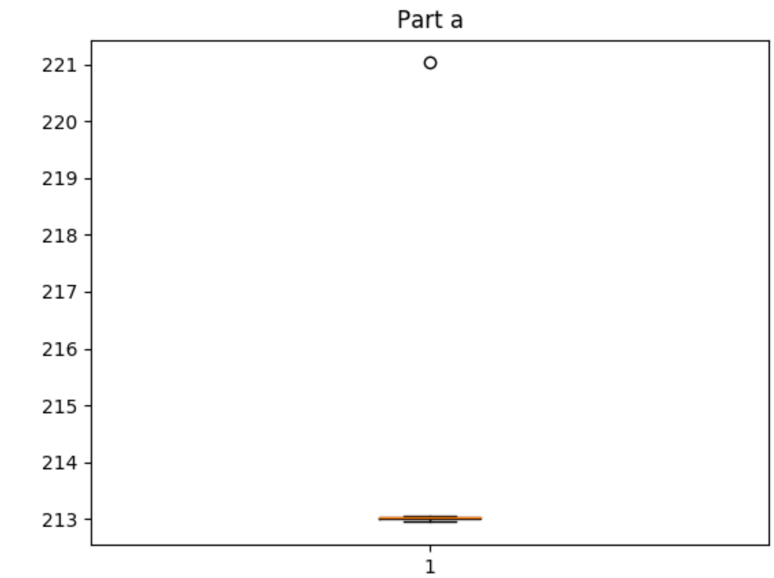

Figure 1: Box plot of the given data, Showing one outliers

b the assumptions are met

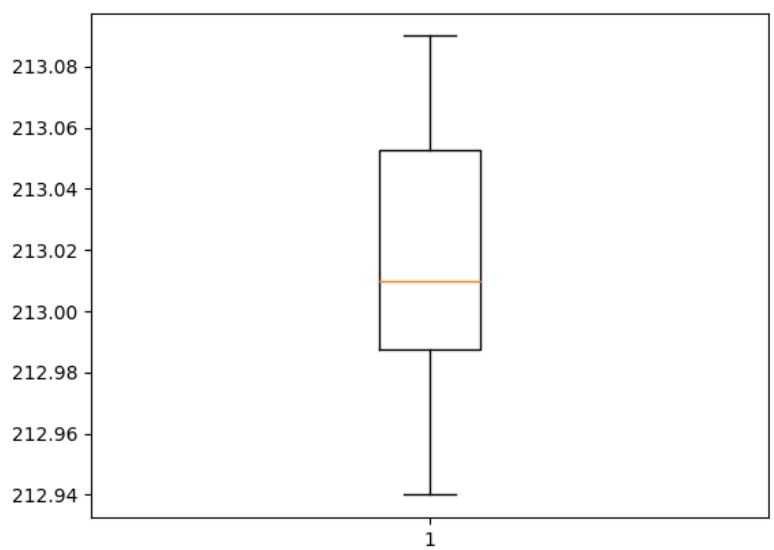

Figure 2: Box plot of the given data, Showing no outliers

c the assumptions are met

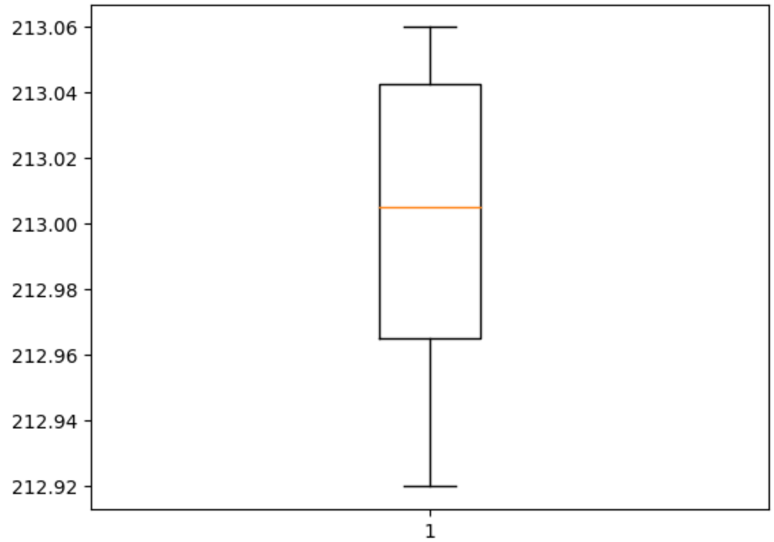

Figure 3: Box plot of the given data, Showing no outliers

6

$$H_0 : p > 3.5, H_1 : p \leq 3.5$$
$$S = 0.084, \bar{X} = 3.50667$$

$$\begin{aligned} t &= \frac{\bar{X} - \mu}{s/\sqrt{n}} \\ &= \frac{3.50667 - 3.5}{.084/\sqrt{6}} \\ &= .195 \\ &\Rightarrow \\ p &> .05 \end{aligned}$$

sense p is grater than 5 % you can conclude that the mean cycle time is greater than 3.5 hours.