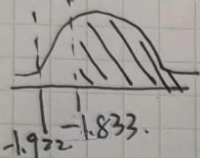


$$1. H_0: m \geq 198$$

$$H_1: m < 198 \quad \frac{197 - 198}{\frac{13.16}{\sqrt{11}}} = -1.9 > 2$$

$$\alpha = 0.05$$

$$t_{0.05}(9) = -1.833$$



拒绝 $H_0 \Rightarrow$ 合格

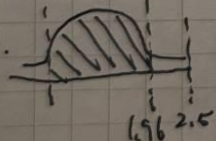
$$2. H_0: m = 420$$

$$H_1: m \neq 420$$

$$\alpha = 0.05 \quad \frac{\alpha}{2} = 0.025$$

$$Z_{0.025} = 1.96$$

$$\frac{423 - 420}{\frac{12}{\sqrt{100}}} = 2.5$$



拒绝 $H_0 \Rightarrow$ 规格改变

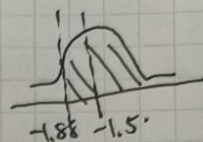
3.

$$H_0: m \geq 70$$

$$H_1: m < 70$$

$$Z_{0.03} = -1.88$$

$$\frac{68.5 - 70}{\frac{6}{\sqrt{30}}} = -1.5$$

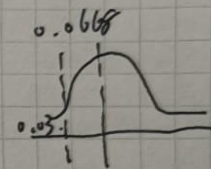


不拒绝 $H_0 \Rightarrow$ 成绩没有不如去年

$$4. P(Z < -1.5)$$

$$-0.0668 > 0.03$$

\Rightarrow 不拒绝 H_0



$$5. H_0: m \leq 1.5$$

$$H_1: m > 1.5$$

$$Z_{0.05}(4) = 2.132$$

$$\frac{1.52 - 1.5}{\frac{0.019}{\sqrt{5}}} = 2.354$$

拒绝 $H_0 \Rightarrow$ 超标, 不合格

