

1. $H_0 = m \geq 198$

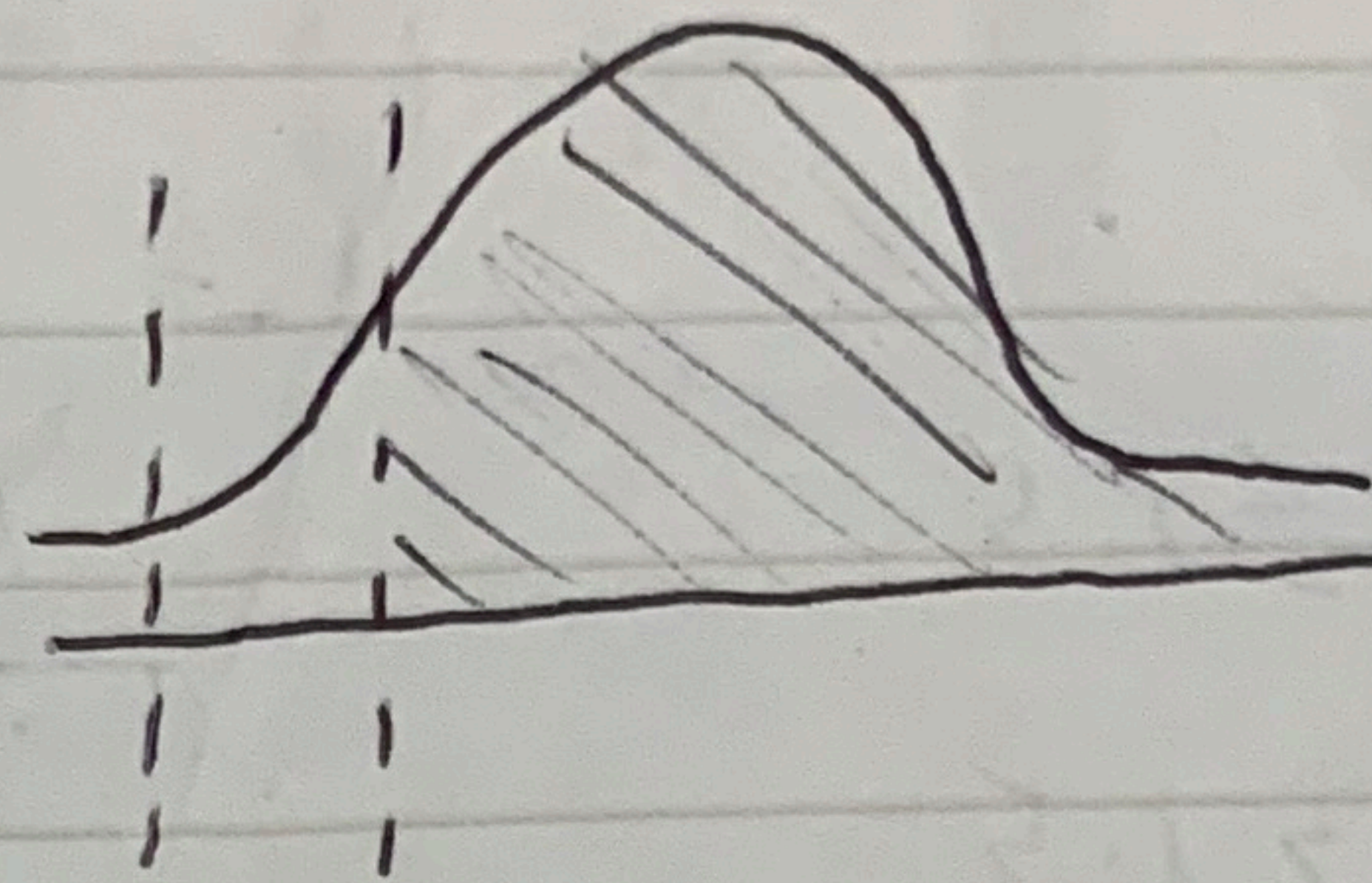
$H_1 = m < 198$

$\alpha = 0.05$

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

拒絕 $H_0 \Rightarrow$ 合格

$$\frac{190 - 198}{\frac{136}{\sqrt{10}}} = -1.922$$



$-1.922 < -1.833$

2. $H_0 = m = 420$

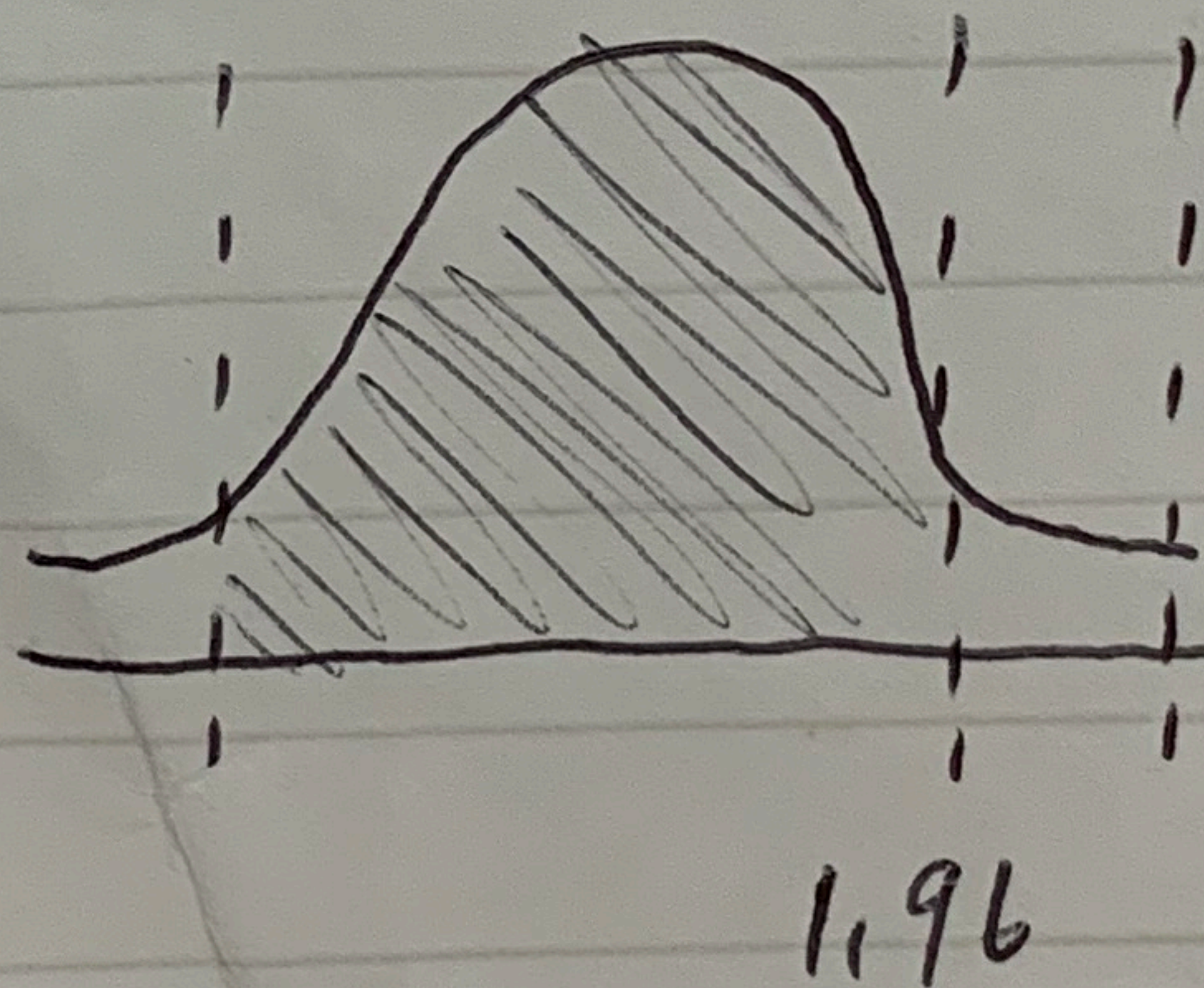
$H_1 = m \neq 420$

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

$Z_{0.025} = 1.96$

拒絕 $H_0 \Rightarrow$ 規格改變

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



3. $H_0 = m \geq 70$

$H_1 = m < 70$

$Z_{0.03} = -1.88$

$$\frac{68.5 - 70}{\frac{6}{\sqrt{36}}} = -1.5$$

不拒絕 $H_0 \Rightarrow$ 成績沒有不如去年