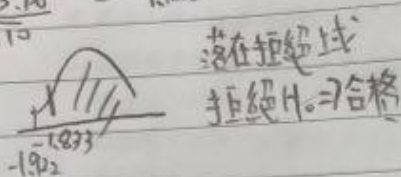
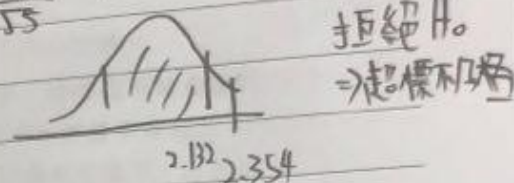


1.
 $H_0: \mu \geq 198$ $H_1: \mu < 198$
 $\alpha = 0.05$ $t_{0.05}(9) = -1.833$
 $\frac{190 - 198}{\frac{13.16}{\sqrt{10}}} = -1.922$

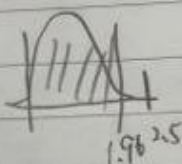


5. $H_0: \mu \leq 1.5$ $H_1: \mu > 1.5$
 $t_{0.05}(4) = 2.132$
 $\frac{1.52 - 1.5}{\frac{0.019}{\sqrt{5}}} = 2.354$



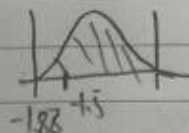
2. $H_0: \mu = 420$
 $H_1: \mu \neq 420$

$\alpha = 0.05$ $\frac{\alpha}{2} = 0.025$
 $z_{0.025} = 1.96$
 $\frac{423 - 420}{\frac{12}{\sqrt{100}}} = 2.5$ 拒絕 H_0



3. $H_0: \mu \geq 70$ $H_1: \mu < 70$

$z_{0.03} = -1.88$
 $\frac{68.5 - 70}{\frac{6}{\sqrt{36}}} = -1.5$



不拒絕 $H_0 \Rightarrow$
 成績沒不如去年

4. $P(Z \leq 1.5) = 0.0668$ 70.03

