

Hypothesis Testing

One Sample/Two Tails:

H0: Sample mean = population mean

H1: Sample mean \neq population mean

Example: If the population mean for example is: 16.3 then :

H0: $\bar{x} = 16.3$

H1: $\bar{x} \neq 16.3$

One Sample /One Tail:

H0: Sample mean = population mean

If we have greater than in the question:

H1: Sample mean $>$ population mean

If we have less than in the question:

H1: Sample mean $<$ population mean

in the joggers example: the population mean is 36.7

H0: $\bar{x} = 36.7$

H1: $\bar{x} > 36.7$

Two Samples /One Tail:

H0: $\bar{x}_1 = \bar{x}_2$

H1: $\bar{x}_1 > \bar{x}_2$ OR H1: $\bar{x}_1 < \bar{x}_2$

Two Samples /Two Tails:

H0: $\bar{x}_1 = \bar{x}_2$

H1: $\bar{x}_1 \neq \bar{x}_2$