

Q. 11. 10

The mean is a statistic that is the subject of a hypothesis test. It is not always important, especially in the case of an experiment where the dependent variable is a count. It is important when the dependent variable is continuous.

**QUESTION 11**  
What is the null hypothesis?

In the following cases, the null hypothesis is that the population mean is equal to the value given.

**(a)**  $\mu = 10$ ,  $\sigma = 2$   
The mean of the population is 10.

**(b)**  $\mu = 10$ ,  $\sigma = 2$   
The standard deviation of the population is 2.

**QUESTION 12**

**(a)**  $\mu = 10$ ,  $\sigma = 2$ . (People are different in their heights.)

**(b)** The null hypothesis is that the population mean is 10.

- (i)  $\mu = 10$ ,  $\sigma = 2$
- (ii)  $\mu = 10$ ,  $\sigma = 2$
- (iii)  $\mu = 10$ ,  $\sigma = 2$
- (iv)  $\mu = 10$ ,  $\sigma = 2$
- (v)  $\mu = 10$ ,  $\sigma = 2$
- (vi)  $\mu = 10$ ,  $\sigma = 2$
- (vii)  $\mu = 10$ ,  $\sigma = 2$
- (viii)  $\mu = 10$ ,  $\sigma = 2$
- (ix)  $\mu = 10$ ,  $\sigma = 2$
- (x)  $\mu = 10$ ,  $\sigma = 2$

**QUESTION 13**

**(a)**  $\mu = 10$ ,  $\sigma = 2$ . (People are different in their heights.)

Change the null hypothesis to something that is more specific and testable. The null hypothesis is that the population mean is 10. The alternative hypothesis is that the population mean is not 10.

- (i)  $\mu = 10$ ,  $\sigma = 2$
- (ii)  $\mu = 10$ ,  $\sigma = 2$

