

$$1. \sigma = 2.5, n = 9, \mu = 5, \bar{x} = 7$$

$$H_0: \mu = 5$$

$$H_1: \mu > 5$$

$$Z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{7 - 5}{\frac{2.5}{\sqrt{9}}} = 2.4$$

$$P(Z > 2.4) = 0.0082$$

$$2. n = 16, \bar{x} = 85, \mu = 92, \sigma = 13$$

$$Z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{85 - 92}{\frac{13}{\sqrt{16}}} = -2.15$$

The sample mean is 2.15 standard errors below the population mean.

3. ~~The~~ We know the population standard deviation and that the shape of the distribution of sample mean is normal.

4. Power $(1 - \beta)$

None of the answers are correct

5. Made a Type II error.

6. Yes

$$7. df = n - 1 = 25 - 1 = 24$$

$$8. 0.05 \times 0.05 = 0.003$$

$$9. H_0: \mu \leq 2.5$$

$$H_1: \mu > 2.5$$

$$n = 25, \bar{x} = 4.75, \sigma = 1.2$$

Interpret

$$10. P(F \text{ and } P) = P(F) \times P(P)$$

$$= \frac{28}{52} \times \frac{14}{39}$$

$$= 0.19$$