

Power Practice Problems and Solutions

1. Please determine the power for one sample t practice problem #1. How large a sample size would the experimenter have needed for adequate power?

*Answer: $\delta = 1.5$
 $1 - \beta = .44$
 $n = 40$ for adequate power*

2. Please determine power for one sample t practice problem #2.

*Answer: $\delta = 3$
 $1 - \beta = .91$*

3. Please determine the power for independent samples t practice problem #1, Determine how large a sample size the experimenter would have needed for adequate power.

*Answer: $\delta < 1$
 $1 - \beta < .17$
 $n = 272$ for adequate power*

4. Please determine the power for independent samples t practice problem #3. Please determine how large a sample size the experimenter would have needed for adequate power.

*Answer: $\delta < 1$
 $1 - \beta < .17$
 $n = 81$ for adequate power*

5. Please determine the power for related samples t practice problem #1. Is this an acceptable amount of power?

*Answer: $\delta = 2.4$, or 2.3 if conservative
 $1 - \beta = .78$, or $.74$*

6. Using related samples t practice problem #2, determine the power. How large a sample size would the experimenter need for adequate power?

*Answer: $1 - \beta < .26$
 $n = 142$ for adequate power*

7. Please determine power for correlation and regression practice problem #1.

*Answer: $\delta = 1.4$
 $1 - \beta = .4$*

8. Please determine power for correlation and regression practice problem #2. How large a sample is needed for adequate power?

*Answer: $\delta = 1$
 $1 - \beta = .17$
 $n = 149$ for adequate power*

9. Please determine power for correlation and regression practice problem #3.

*Answer: $\delta = 2.8$
 $1 - \beta = .8$*