

**Example: Adverse Effect of Clarinex (Prob. 21, page 466)**

The drug Clarinex is used to treat symptoms from allergies. In a clinical trial of this drug, 2.1% of the 1655 treated subjects experienced fatigue. Among the 1652 subjects given placebos, 1.2% experienced fatigue. Use a 0.05 significance level to test the claim that the incidence of fatigue is greater among those who use Clarinex. Does fatigue appear to be a major concern for those who use Clarinex?

**Example: Racial Profiling (Prob. 1, page 507)**

Racial profiling is the controversial practice of targeting someone for suspicion of criminal behavior on the basis of race, national origin, or ethnicity. The table below includes data from randomly selected drivers stopped by police in a recent year (based on data from the U.S. Department of Justice, Bureau of Justice Statistics).

- a) Use a 0.05 significance level to test the claim that the proportion of blacks stopped by police is significantly greater than the proportion of whites.
- b) Construct a confidence interval that could be used to test the claim in part (a). Be sure to use the correct level of significance. What do you conclude based on the confidence interval?

	<b>Race and Ethnicity</b>	
	<b>Black and Non-Hispanic</b>	<b>White and Non-Hispanic</b>
<b>Drivers stopped by police</b>	24	147
<b>Total number of observed drivers</b>	200	1400

**Example: Readability of J. K. Rowling and Leo Tolstoy**  
**(Prob. 3, page 507)**

Listed below are Flesch Reading Ease scores taken from randomly selected pages in J. K. Rowling's *Harry Potter and the Sorcerer's Stone* and Leo Tolstoy's *War and Peace*.

Higher Flesch Reading Ease scores indicated writing that is easier to read. Use a 0.05 significance level to test the claim that *Harry Potter and the Sorcerer's Stone* is easier to read than *War and Peace*. Is the result as expected?

<b>Rowling</b>	85.3	84.3	79.5	82.5	80.2	84.6	79.2	70.9	78.6	86.2	74.0	83.7
<b>Tolstoy</b>	69.4	64.2	71.4	71.6	68.5	51.9	72.2	74.4	52.8	58.4	65.4	73.6

**Example: Confidence Interval and Hypothesis Test for Bipolar Depression Treatment (Problems 15 and 16, page 480)**

In clinical experiments involving different groups of independent samples, it is important that the groups be similar in the important ways that affect the experiment. In an experiment designed to test the effectiveness of paroxetine for treating bipolar depression, subjects were measured using the Hamilton depression scale with the results given below (based on data from "Double-Blind, Placebo-Controlled Comparison of Imipramine and Paroxetine in the Treatment of Bipolar Depression," by Nemeroff et al., *American Journal of Psychiatry*, Vol. 158, No. 6).

- a) Construct a 95% CI for the difference between the two population means. Based on the results, does it appear that the two populations have different means? Should paroxetine be recommended as a treatment for bipolar depression?
- b) Use a 0.05 significance level to test the claim that the treatment group and placebo group come from populations with the same mean. How does this result compare with the CI found in part (a)?

	<b><i>n</i></b>	<b><math>\bar{x}</math></b>	<b><i>s</i></b>
<b>Placebo</b>	43	21.57	3.87
<b>Treatment</b>	33	20.38	3.91