Practice Run

1. Use the Greatest Canadian Achievement results listed in the excerpt above to address the following:

    a. Determine the confidence interval for the equality result.

    b. If the margin of error was changed from ± 1.3 percentage points to ± 5.7 percentage points, how would your interpretation of the data change?

    c. How would your impression of the data change if the confidence level was listed as 4 times out of 5 instead of as 19 times out of 20?

2. There were approximately 28 000 000 Canadian adults when the survey on the Greatest Canadian Achievement was conducted. Give an upper and lower estimate for the number of Canadian adults that feel diversity is Canada's greatest achievement over the past 20 years.

Compare your answers.

1. Use the Greatest Canadian Achievement results listed in the excerpt above to address the following:

    a. Determine the confidence interval for the equality result.

        The confidence interval is $34 \pm 1.3\%$ or from 32.7% to 35.3%.

    b. If the margin of error was changed from ± 1.3 percentage points to ± 5.7 percentage points, how would your interpretation of the data change?

        A larger margin of error means there is a greater chance that the true value will be further from the predicted value. The new confidence interval for the equality result would be 28.3% to 39.7%. This is a much larger range of values than when the margin of error was 1.3 percentage points.

    c. How would your impression of the data change if the confidence level was listed as 4 times out of 5 instead of as 19 times out of 20?

        A confidence level of 4 out of 5 is equivalent to 80%. This is much lower than the original 95% confidence level (19 out of 20). There is a much greater chance that the confidence interval will not include the true value when the confidence level is only 80%.

2. There were approximately 28 000 000 Canadian adults when the survey on the Greatest Canadian Achievement was conducted. Give an upper and lower estimate for the number of Canadian adults that feel diversity is Canada's greatest achievement over the past 20 years.

    The confidence interval for diversity is 21.7% to 24.3%.
    $0.217 \times 28\,000\,000 = 6\,076\,000$ and $0.243 \times 28\,000\,000 = 6\,804\,000$, so there is a 95% chance the true number of Canadians feeling that diversity is Canada's greatest achievement over the past 20 years is between 6 076 000 and 6 804 000.

B. Sample Size