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UNDERSTANDING POLITICAL POLLS

Barb Blucher, an independent lawyer and aspiring politician, was reading the headlines on the front page of the *Financial Post* (a major national publication in Canada). The headline read "Liberals head to majority, new poll says." In the article she identified what she felt were key statements:

> The national survey of 2,638 voting-age Canadians places the Liberals a commanding 12 percentage points ahead of the Conservatives. The Liberals are favored by 38 per cent of those polled. The Conservatives have 26 per cent.
>
> The national survey, which excludes the undecided, is accurate within 1.9 percentage points 19 times out of 20.

Barb had taken a statistics course in her MBA days but couldn't relate what she had learned in the course to what she had just read. She realized that if she were to have a career in politics she would need to understand how polls worked.

She sent an e-mail to her statistics professor asking the following questions:

1. What is a random sample? How would you go about collecting one? What factors (i.e., gender, region, age) must you consider when designing a sample frame?
2. The article says that 38 per cent will vote Liberal. Is this a fact or an estimate?
3. The article says the survey is accurate within 1.9 percentage points. What exactly does this mean?
4. The article says that the sample consisted of 2,638 people. Where did this number come from?
5. The article also says the results are accurate 19 times out of 20. What does this mean?

Her professor answered the questions and then sent her another article from the *Financial Post* reporting the results of an Ontario (a province of Canada) poll. He asked her to interpret the following two passages from the article:

> The Ontario poll sample of 940 people has a 3.2 per cent plus or minus error rate and is accurate 19 times out of 20.
>
> The government has even managed to break one of the old paradigms about voter behavior, namely that voters inevitably grow more conservative as they grow older. While the new quarterly poll showed support for the Tories rising through different age groups — from 21 per cent among 18- to 29-year-olds to 40 per cent among 50- to 64-year-olds — it drops off dramatically after age 65. Only 34 per cent of those 65+ support the government.

In particular he asked for answers to the following questions.

1. The Ontario poll has 940 people, whereas the national poll had 2,638 people. Why this difference? How does the smaller sample size affect the results? How can the pollsters still be confident the poll is right 19 times out of 20?
2. The journalist said that support drops off dramatically after age 65. Do you agree with this statement? If not, why is the statement wrong?