# Question 1

## Tab 1: Primary Election

*From a recent news article about the primary election for the Domestic Party*

In yesterday's primary election for the nomination of the Domestic Party for the vacant town council seat, Amy Baerga won with 80 votes and will go on to the general election next month. The other two candidates, Sheldon Aaronson and Anil Chouhary received 60 votes and 45 votes, respectively. The party's recent change in voting procedure, allowing members of the party who fill out a ballot to vote for either one or two of the candidates, appears to have helped assure victory for the party's up-and-comer. 15 of the people who voted for Aaronson also voted for Baerga, and 20 of the people who voted for Chouhary also voted for Baerga. A total of 90 voters voted for at least one of the two establishment candidates, Aaronson and Chouhary. In what officials are calling a disappointing turnout, only 3/5 of the members of the Domestic Party filled out a ballot for this primary election.

## Tab 2: General Election

*From an email sent to Baerga from her campaign manager after learning the results of the general election*

We had predicted that due to the presence of four candidates as well as the fact that voters can only vote for one candidate, your percentage of the votes would decrease from what you had received in the primary election. It seems our prediction was correct. I was just told by an election official that of the 900 votes cast, Tom Goodwin received 24%, Pamela Hart received 18%, and Bill Iha received 30%.

**1. Consider each statement. Indicate whether the statement about the primary election is true or false based on the information provided.**

| True | False | Statements |
|------|-------|------------|
|      |       | The Domestic Party has 225 members |
|      |       | During the primary election, Amy Baerga received 1/3 of the votes she received during the general election. |
|      |       | In the Domestic Party primary election, 1/4 of the people who voted for Sheldon Aaronson also voted for Amy Baerga. |

**2. For each statement, determine whether the statement can be inferred from the information above. Select Yes if the statement can be inferred. Otherwise, select No.**

| Yes | No | Statements |
|-----|-----|------------|
| | | Amy Baerga received more votes during her primary election than did Tom Goodwin during his primary election. |
| | | Amy Baerga received more votes than did any other candidate in the general election. |
| | | Bill Iha received 270 votes in the general election. |

**3. Consider each statement. Indicate whether the statement about the primary election is true or false based on the information provided.**

| True | False | Statements |
|------|-------|------------|
| | | 45 people voted exclusively for Amy Baerga. |
| | | 20 people voted for both Sheldon Aaronson and Anil Chouhary. |
| | | A total of 125 voters voted for Sheldon Aaronson, Amy Baerga, or both Aaronson and Baerga. |

# Question 2

Michael took a survey on a social media site of 200 of his friends who identified as fans of a certain series of science-fiction movies. He found that, of the 150 of his friends born on or before the year 1990, 80% said they were fans only of the earlier movies, while the remainder were fans only of the later movies. Of the remainder of his friends, however, 90% said they were fans only of the later movies, while the remainder were fans only of the earlier movies.

**In the table below, select the total number of people surveyed who were born after the year 1990 and the total number of people surveyed who preferred the earlier movies.**

| Born After 1990 | Fan of Earlier Movies | |
|-----------------|----------------------|-----|
| | | 50 |

| | | 75 |
|---|---|---|
| | | 100 |
| | | 125 |
| | | 150 |
| | | 175 |

# Question 3

Scientists have conceived of a new treatment method for a particular form of cancer. Healthy cells would be "marked" by introducing a modified chromosome that the treatment could detect, thereby avoiding attacking the healthy cells and attacking the other, cancerous cells. The scientists believe this new method could eliminate the need to use other treatments, such as traditional chemotherapy and radiation, to treat this form of cancer.

**In the table below, identify which statement, if true, most strengthens the argument above, and which statement, if true, most seriously weakens the argument above.**

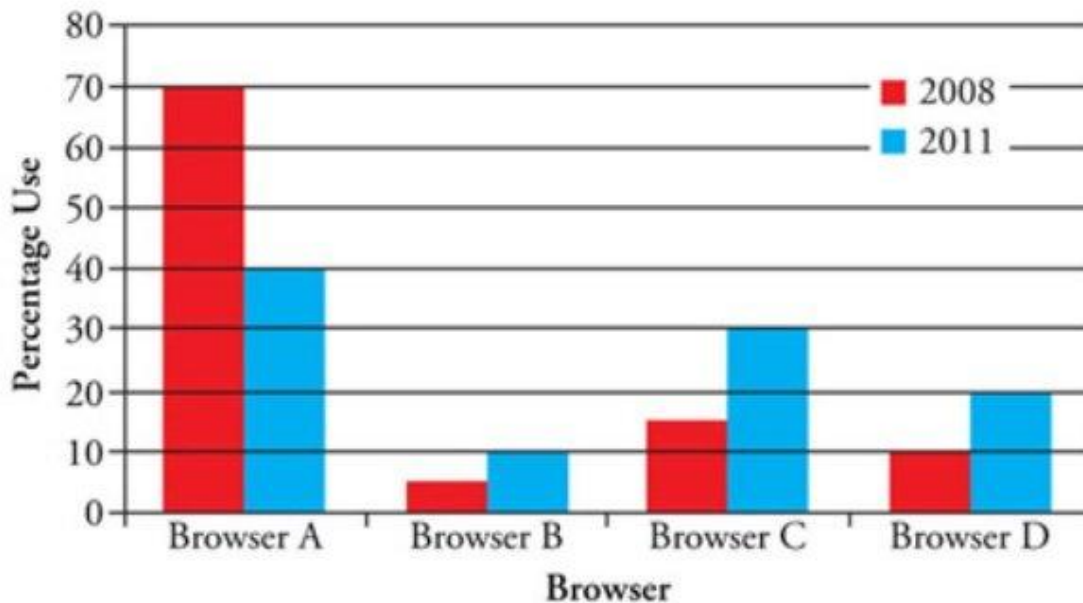| Strengthen | Weaken | |
|---|---|---|
| | | Human cells have a very wide variation in chromosomal cellular structure. |
| | | Chemotherapy treatments focus on rapidly reproducing cells by attacking cells that are in the process of reproducing. |
| | | Some types of cancer are too widespread to be treated using the new method. |
| | | The cancerous cells could attack the healthy cells containing the modified chromosome and turn them into cancerous cells, still containing the modified chromosome. |
| | | It is possible to modify virtually any kind of healthy human cell by introducing genetic modifications without causing other cellular changes. |

# Question 4

## Tab 1: Email #1

*E-mail from Chief Information Officer to Chief Operating Officer*

Between 2008 and 2011, the number of Problem Reports (reports of computers affected by viruses or malware) has gone up significantly, although the company still has approximately 1,000 computers in service, just as it did in 2008.

We have performed an investigation as to the cause of the problems and determined that the increase in the Problem Reports occurred after many company employees began using a non-recommended browser (a browser other than Browser A) as their default Internet browser. I recommend that all employees be required to use the same default browser in order to reduce these risks.

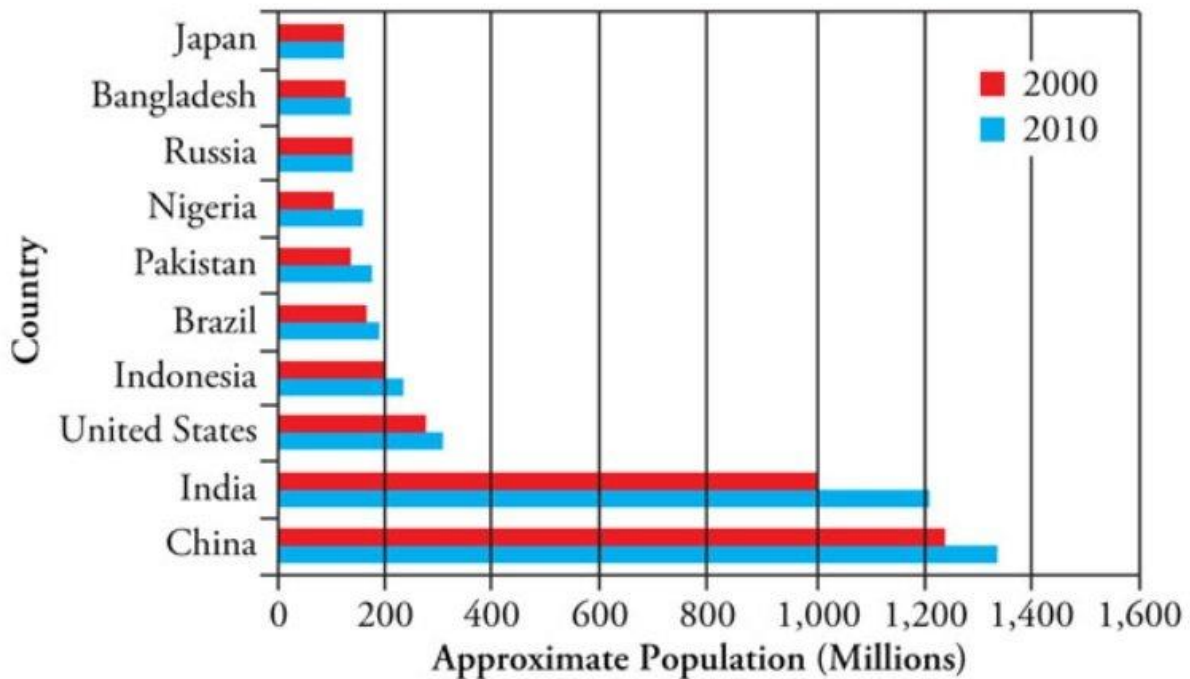## Tab 2: Attachment

## Tab 3: Email #2

E-mail from Information Security Officer to Chief Information Officer
I think the increase in Problem Reports has something to do with company employees who changed their default Internet browser to something other than Browser A. In 2011, we only had 140 Problem Reports from computers using Browser A, a decrease of 20% from 2008, while the annual number generated by the computers using a non-recommended browser went up to 200, an increase of 60% from 2008.

### 1. Consider each of the following statements. Based on the company's data, is the statement true or false?

| True | False | |
|------|-------|---|
| | | The number of Problem Reports generated per computer using Browser A increased by 40% from 2008 to 2011. |
| | | The number of Problem Reports generated per computer using a non-recommended browser decreased by 20% from 2008 to 2011. |
| | | In 2011, computers using Browser A generated 20% more Problem Reports per computer than did computers using non-recommended browsers. |

# Question 5



The bar chart above includes the 10 most populated countries in the world based on estimated 2010 population, and includes bars for the approximate population of each country, in millions, in the years 2000 and 2010.

**Use the drop down menus to fill in the blanks in each of the following statements based on the information given by the bar chart.**

**The ratio of the 2010 total population of the 2 most populated countries to that of the remaining 8 countries is_____.**

A. greater than 1
B. approximately equal to 1
C. less than 1

**The percentage increase in total population of the two most populated countries from 2000 to 2010 was closest to_____.**

A. 5%
B. 15%
C. 25%
D. 35%