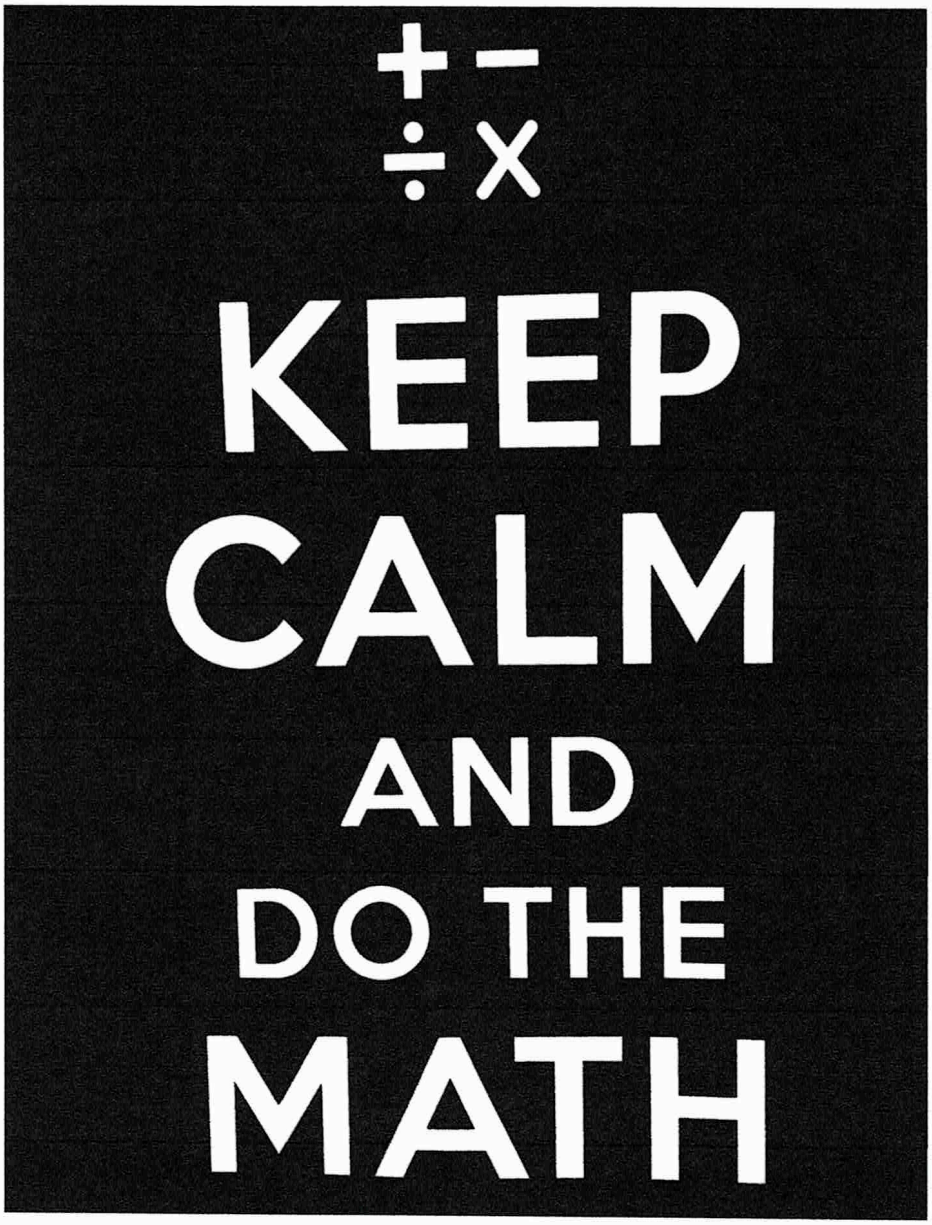
NOMBRE: _____

P.A.T Prep

Probability in Society



St. Brendan School

Mr. Martínez

Probability In Society

A school principal asks every student and staff member in the school if they like the idea of school uniforms. The school has 450 students and 30 staff members.

7. *The survey above uses a* ___i___ *, and* ___ii___ *would have the most influence on the data.*

The statement above is completed by the information in row

Row	*i*	*ii*
A.	sample	students
B.	sample	staff
C.	population	students
D.	population	staff

The following survey question was given to a sample of Grade 9 students:

Do you prefer to use your television to play childish video games or to watch educational programs?

26. Data collected by this survey may be **most** influenced by a problem related to

A. ethics
B. privacy
C. use of language
D. cultural sensitivity

A teacher placed a cafeteria coupon in only one of three differently coloured envelopes. A randomly selected student was asked to choose one of the three envelopes. The student chose the red envelope because red was his favourite colour.

7. The student's decision was based on

A. subjective judgment
B. theoretical probability
C. experimental probability
D. mathematical calculation

14. Which of the following statements is **not** a valid reason for using a representative sample to conduct a survey?

A. It is cheaper to use a sample.
B. There is too much error in a sample.
C. There is too much data in the complete population.
D. It is too time-consuming to use the complete population.

Nina and Sarah observe that 6 of their 10 female classmates are shorter than 160 cm. Nina concludes that of the 410 students in their school, 246 are shorter than 160 cm. Sarah believes Nina's conclusion cannot be supported by her observation.

12. Which of the following statements **best** supports Sarah's belief?

A. Nina's survey sample contains only female students.
B. Nina's probability calculation is incorrect.
C. Nina did not use a proper questionnaire.
D. Nina completed her survey too quickly.

Ethan conducts a survey to determine the demand for an outdoor skating rink in his community.

40. Ethan can **best** minimize the bias in his survey by collecting data from people who

A. are different ages
B. live in different cities
C. participate in figure skating
D. visit the rink at the same time each day

Consider the following four surveys.

1 Customers in an electronics store are asked whether they would purchase last year's model of a television or wait for this year's new and improved model.

2 A random sample of Grade 9 boys is asked to determine which snacks should be available in the school's vending machine.

3 During the summer, every household in a large community is asked to complete a detailed questionnaire to help determine whether the local skating rink should be renovated.

4 Grade 6 students are asked how many times they wash their hair each week.

Numerical Response

8. Match each survey listed above with the potential data collection problem it **best** represents.

Survey:	_____	_____	_____	_____
Data collection problem:	**Bias**	**Use of Language**	**Privacy**	**Time and Timing**

(Record all **four digits** of your answer in the numerical-response section on the answer sheet.)

The chart below shows the life expectancies, at birth, of males and females in a particular country over 40 years.

Year of Birth	Life Expectancy at Birth (years)	
	Male	Female
1970	67.1	74.1
1980	70.0	76.5
1990	71.8	78.5
2000	74.3	79.6
2010	75.2	80.4

0. Which of the following assumptions supports the prediction that a female born in the year 2020 in this country will live to the age of 80.7 years?

A. Females in this country live longer than males.
B. The life expectancy for females will continue to slowly increase.
C. Changes in the environment will reduce life expectancies by 2020.
D. The gap between the life expectancies of males and females will be smaller in 2020.

Jonas conducts a survey to determine which flavour of ice cream is the favourite among the students at his school. He plans to hand out the questionnaire shown below to 100 randomly selected students.

Which of the following ice cream flavours is the best?

☐ Strawberry
☐ Chocolate
☐ Vanilla

36. The analysis of the data collected by this survey would be **most** affected by issues related to

A. privacy
B. use of language
C. time and timing
D. cultural sensitivity

The organizer of a 16-team soccer tournament wants to conduct a survey to determine the minimum number of games each team in the tournament would like to play.

21. Which of the following samples would provide the most reliable results for her survey?

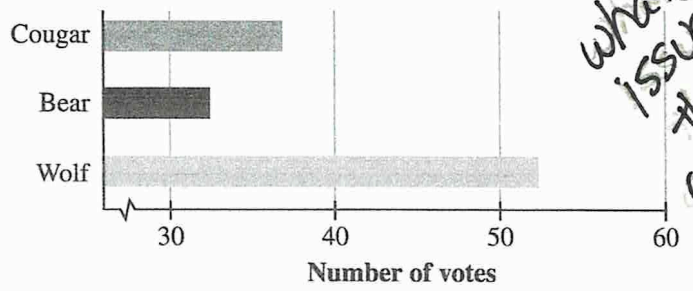
A. One player each from half of the teams
B. Every fourth team that registers in the tournament
C. Three randomly selected players or coaches from each team
D. All of the players and coaches from one randomly selected team

A manager selected 25 watches to test from a batch of 750 watches. He determined that 3 of the selected watches were defective. Based on the results of his survey, the manager concluded that 12% of the 750 watches were defective.

10. Which of the following assumptions did the manager use to reach his conclusion?

A. The process for testing the watches was unreliable.
B. The parts used in the watches are rarely defective.
C. The sample was representative of the population.
D. The watches were made by the same employee.

The student council of a senior high school surveyed 120 out of 250 Grade 10 students to determine which of three animals should be the school's new mascot. The results of the survey are shown below.



what's the issue with the amount of students interviewed?

In a survey, 500 people were asked to name their favourite sport. The results of the survey are shown below.

Strategy
out of 500, 122 is close to what? 1/2, 1/3, 1/4

30. If the data results were displayed on a circle graph, then the measure of the angle that would represent how many people selected football would be approximately

A. 33°
B. 88°
C. 122°
D. 244°

CIRCLE GRAPHS

- Always determine the 100%
- Calculate the % for each category (this is what will be represented as a "piece" of the pie)
- Angle
- Convert the % to decimal

°Angle = decimal × 360°