

Choose the most appropriate answer among the choices A), B), C), and D).

1. A polling company surveys 200 people outside a county courthouse concerning tighter restrictions on smoking in public buildings. Their results indicate that 34% of those surveyed favor tighter restrictions. The actual proportion of county residents who favor tighter restrictions is 65%. The difference is most likely due to
 - A) variability in sampling.
 - B) bias due to the use of a convenience sample.
 - C) confounding variables in the survey.
 - D) the wording of the survey.

2. In order to determine the proportion of voters in a small town who favor a candidate for mayor, the campaign staff takes out an ad in the paper asking voters to call in their preference for mayor. This type of sample is a
 - A) convenience sample.
 - B) simple random sample.
 - C) multi-stage random sample.
 - D) voluntary response sample.

3. A poll of 80 students selected at random at Midtown University found that 20 were in favor of a fee increase to support extra maintenance of gardens on campus. In the example, the sample proportion is
 - A) 20%.
 - B) 8%.
 - C) 80%.
 - D) 25%.

4. A sample of 50 people at a local fast-food restaurant found 15 in favor of new fat-free menu items. In this example, the sample proportion is
 - A) 15%.
 - B) 25%.
 - C) 30%.
 - D) 50%.

5. Random selection of subjects in a survey is used to eliminate variability in results.
 - A) True
 - B) False

6. A flashlight manufacturer sets aside a production line for the assembly of 2000 flashlights to fill a special order. Ninety of these flashlights are selected at random from the production line to be tested, and 15 are found to be defective. The population is
- the 15 defective flashlights.
 - the 90 flashlights tested.
 - the 2000 flashlights produced for this order.
 - all flashlights produced by the manufacturer.
7. A poll asked 956 licensed drivers whether they supported a nationwide lowering of the drunk driving limit to 0.08% BAC (blood alcohol content), and 72% said they did. Estimate a 95% confidence interval for actual percentage among all licensed drivers.
- 70.5% to 73.5%
 - 69% to 75%
 - 71.8% to 72.2%
 - 70% to 74%
8. As part of a research project, a student wishes to survey members of the workforce to determine whether they prefer male or female bosses. Presuming that about half of the workforce prefer female bosses, estimate how many people the student must survey to have a margin of error of 4%.
- 25 people
 - 50 people
 - 625 people
 - 1025 people
9. How many votes are needed for a majority winner if there are 20 voters?
- 10
 - 11
 - 15
 - 20
10. A group of 12 students have to decide among three types of pizza: Sausage (S), Mushroom (M), and Beef (B). Their preference rankings are shown below. Which choice will the group make if they use majority rule?

	Number of Students				
	3	3	2	2	2
First choice	B	M	S	B	S
Second choice	M	B	M	S	B
Third choice	S	S	B	M	M

- S
- M
- B
- No winner can be chosen.

11. A group of 12 students have to decide among three types of pizza: Sausage (S), Mushroom (M), and Beef (B). Their preference rankings are shown below. Which choice will the group make if they use plurality voting?

	Number of Students				
	3	3	2	2	2
First choice	B	M	S	B	S
Second choice	M	S	M	S	B
Third choice	S	B	B	M	M

- A) S
 B) M
 C) B
 D) No winner can be chosen.

12. A group of 12 students have to decide among three types of pizza: Sausage (S), Mushroom (M), and Beef (B). Their preference rankings are shown below. Which choice will the group make if they use the Borda count?

	Number of Students				
	3	3	2	2	2
First choice	B	M	S	B	S
Second choice	M	B	M	S	B
Third choice	S	S	B	M	M

- A) S
 B) M
 C) B
 D) No winner can be chosen.

13. A group of 12 students have to decide among three types of pizza: Sausage (S), Mushroom (M), and Beef (B). Their preference rankings are shown below. Which choice will the group make if they use the Hare system?

	Number of Students				
	3	3	2	2	2
First choice	B	M	S	B	S
Second choice	M	B	M	S	B
Third choice	S	S	B	M	M

- A) S
 B) M
 C) B
 D) No winner can be chosen.

14. A group of 12 students have to decide among three types of pizza: Sausage (S), Mushroom (M), and Beef (B). Their preference rankings are shown below. Which choice will the group make if they use sequential pairwise voting with agenda B, M, S?

	Number of Students				
	3	3	2	2	2
First choice	B	M	S	B	S
Second choice	M	B	M	S	B
Third choice	S	S	B	M	M

- A) S
 B) M
 C) B
 D) No winner can be chosen.

15. A group of 12 students have to decide among three types of pizza: Sausage (S), Mushroom (M), and Beef (B). Their preference rankings are shown below. Is there a Condorcet winner among the pizza types?

	Number of Students				
	3	3	2	2	2
First choice	B	M	S	B	S
Second choice	M	B	M	S	B
Third choice	S	S	B	M	M

- A) S
 B) M
 C) B
 D) No winner can be chosen.

16. Eight board members vote by approval voting on four candidates, A, B, C, and D, for new positions on their board as indicated in the following table. An "X" indicates an approval vote.

	Voters							
	1	2	3	4	5	6	7	8
A	X	X	X	X		X	X	X
B		X	X		X	X		X
C		X		X	X		X	X
D	X		X	X	X	X	X	

Which candidate(s) is (are) elected if 80% approval is necessary and at most two are elected?

- A) No candidates are elected.
 B) Only candidate A is elected.
 C) Only candidate D is elected.
 D) Both candidates A and D are elected.

Answer Key

1. B
2. D
3. D
4. C
5. B
6. C
7. B
8. C
9. B
10. D
11. C
12. C
13. C
14. C
15. C
16. B