

NAME: _____

1. A student determined the density of zinc to be 6.63 g/cm^3 . The correct value is 7.13 g/cm^3 . Find the percent error in her measurement.
2. The Black Banty Company manufactures egg timers. An inspector finds that there are 21 defective timers in a sample of 200.
 - a) What is the probability that a randomly selected timer will be defective?
 - b) According to Black Banty Company quality control standards no more than 3% of timers produced may be defective. Does Black Banty Company need to adjust its manufacturing process to meet this standard?
3. A Gold & Brown Co. quality inspector examines a sample of 50 toasters, and finds that 5 are defective. What is the best prediction of the number of defective toasters in a delivery of 300 toasters?
[A] 30 [B] 5 [C] 295 [D] 50
4. Mark has a circular swimming pool in he backyard. He measures the diameter as 228 inches. The actual diameter of the pool is 217 inches. Mark wants to install a rail along the top edge of the swimming pool. If he uses his measurement, how many inches of extra rail will he buy? How does this difference relate to Mark's original measurement error?
5. Which sample size will produce a margin of error of $\pm 7.3\%$?
[A] 188 [B] 282 [C] 422 [D] 144
6. Which sample size has a margin of error of 4% ?
[A] 400 [B] 1000 [C] 600 [D] 4000
7. A survey of 850 people reported that 42% favored the re-election of the current governor. Find the margin of error.
8. A survey of 350 people shows that 210 have seen a movie in the last month. Find the sample proportion and margin of error.

NAME: _____

9. Compare the quantity in Column A with the quantity in Column B.

| <u>Column A</u> | <u>Column B</u> |
|---|---|
| the cost of a survey with \$10 per interview and a 4% margin of error | the cost of a survey with \$20 per interview and a 6% margin of error |

- [A] The quantity in Column A is greater. [B] The quantity in Column B is greater.
[C] The two quantities are equal.
[D] The relationship cannot be determined on the basis of the information supplied.

10. Justin read in the newspaper that 50% of voters in his city were voting “no” on a local initiative measure. The poll claimed a margin of error of $\pm 4\%$. Justin wanted to know how many voters were polled and wrote an equation to solve. What answer should he have gotten?

11. When 3001 voters were polled, 73% said they were voting “yes” on an initiative measure. Find the margin of error and an interval which is likely to contain the true population proportion.

- | | |
|---|---|
| [A] $\pm 54.8\%$; between 18.2% and 100.0% | [B] $\pm 18\%$; between 55% and 91% |
| [C] $\pm 1.8\%$; between 71.2% and 74.8% | [D] $\pm 5.5\%$; between 67.5% and 78.5% |

12. Two candidates are running for office. A survey shows that one candidate is favored by 51% of the voters, the other by 47%, with 2% undecided. Explain why it is important to know the size of the survey.

[1] 7.0% _____

[2] 0.105, yes _____

[3] A _____

35 inches extra. The difference equals

[4] $\pi \times$ Mark's measurement error. _____

[5] A _____

[6] C _____

[7] 3.4% _____

[8] 60%; 5.3% _____

[9] A _____

[10] 625 _____

[11] C _____

Answers may vary. Sample: If the margin of error is 2% or more, the candidates could be tied or the candidate with 47% could actually

[12] be preferred by more than half the voters. _____