ANSWERS

PERCENTAGE OF ERROR

Read carefully, each problem presents an estimated value and a real one. Use the percentage error formula. Write your answer, include your answer as a percentage to two decimal places..

$$\text{Percent Error} = \frac{Actual\ Value - Estimated\ Value}{Actual\ Value} \times 100\%$$

1) A fitness tracker estimated that a user walked 10,000 steps in a day, but the actual count was 9,500 steps.

Solution:

Percent Error: $\frac{9{,}500 - 10{,}000}{9{,}500} \times 100 = \frac{-500}{9{,}500} \times 100 = -5.26\ \%$

2) A company predicted that it would receive 400 responses to a survey, but it only received 380 responses.

Solution:

Percent Error: $\frac{380 - 400}{380} \times 100 = \frac{-20}{380} \times 100 = -5.26\ \%$

3) An architect estimated the cost of a building project at $1,500,000, but the actual cost came out to be $1,450,000.

Solution:

Percent Error: $\frac{1{,}450{,}000 - 1{,}500{,}000}{1{,}450{,}000} \times 100 = \frac{-50{,}000}{1{,}450{,}000} \times 100 = -3.4\ \%$

4) A chef estimated that 250 guests would attend a banquet, but only 240 guests showed up.

Solution:

Percent Error: $\frac{240 - 250}{240} \times 100 = \frac{-10}{240} \times 100 = -4.17\ \%$

5) A student estimated that a solution would have a pH of 7.4, but a precise measurement showed it was 7.1.

Solution:

Percent Error: $\frac{7.1 - 7.4}{7.1} \times 100 = \frac{-0.3}{7.1} \times 100 = -4.23\ \%$

How Did You Do?