

HW: Worksheet

Warm up:

1) There are 47 students in Peer Leaders. Last year, there were 46 students in Peer Leaders.

What was the percent change?

$$\frac{47-46}{46} = \frac{1}{46} = 0.02173913 \approx 2.17\%$$

2) You bought a limited release Supreme hoodie for \$280. You then sold it online for \$835. By what percentage did you mark it up?

$$\frac{835-280}{280} = \frac{555}{280} = 1.982142857$$

198.21%

Mrs. Wirasnik gave you a test tube with 8.7mL of acid in it. However, when you were working with it, you measured it to be 8.5mL. What was your percent error? (Mrs. Wirasnik is never wrong)

$$\frac{8.7-8.5}{8.7} = \frac{0.2}{8.7} = 0.0229885\%$$

2.30%

$$\% \text{ error} = \frac{\text{difference}}{\text{actual}}$$

There was a giant jar of skittles at the last Book Fair. You guessed that there were 382 skittles in the jar but there were actually 457. What was your percent error?

$$\frac{457 - 382}{457} = \frac{75}{457} = 0.164113786$$

$$16.41\%$$

Five lab groups measure the same 200g object and record masses of 187g, 206g, 212g, 194g, and 216g. What is the average percent error?

$$\frac{200-187}{200} = \frac{13}{200} = 6.5\%$$

$$\frac{206-200}{200} = \frac{6}{200} = 3\%$$

$$\frac{212-200}{200} = \frac{12}{200} = 6\%$$

$$\frac{200-194}{200} = \frac{6}{200} = 3\%$$

$$\frac{216-200}{200} = \frac{16}{200} = 8\%$$

$$\frac{6.5+3+6+3+8}{5} = \frac{26.5}{5}$$

$$= 5.3\%$$

A student's calculation was found to have a 15.6% error and the actual value was determined to be 25.7mL. What are the two possible values for the student's experimental measurement?

$$100 + 15.6 = 115.6\%$$

$$1.156(25.7)$$

$$29.7092$$

$$100 - 15.6 = 84.4\%$$

$$0.844(25.7)$$

$$21.6908$$

$$29.71\text{mL or } 21.69\text{mL}$$

- 1) An experimental measurement of 10.4mL was taken but the actual measurement was 9.7mL. What is the percent error?
- 2) A lab group knows the exact mass of an object is 200g, but when they measure it they record 196g. What is their percent error?
- 3) Mr. McGarry has groups of students measure the length of the room, which is 28ft. The groups measure the length to be 26ft, 28ft, 29ft, and 26ft. What was the average percent error?
- 4) An event coordinator estimated that 56,000 people would attend a concert but it was found that she has a 7% error. What are the two possible values for the actual number of attendees?

1) An experimental measurement of 10.4mL was taken but the actual measurement was 9.7mL. What is the percent error?

$$\frac{10.4 - 9.7}{9.7} = \frac{0.7}{9.7} = 0.072164948$$

7.22%



2) A lab group knows the exact mass of an object is 200g, but when they measure it they record 196g. What is their percent error?

$$\frac{200-196}{200} = \frac{4}{200} = 0.02 = 2\%$$

3) Mr. McGarry has groups of students measure the length of the room, which is 28ft. The groups measure the length to be 26ft, 28ft, 29ft, and 26ft. What was the average percent error?

$$\frac{28-26}{28} = 7.14\%$$

$$\frac{28-28}{28} = \frac{0}{28} = 0\%$$

$$\frac{29-28}{28} = 3.57\%$$

$$\frac{28-26}{28} = 7.14\%$$

$$\frac{7.14 + 0 + 3.57 + 7.14}{4}$$

$$\frac{17.85}{4} = 4.46\%$$

4) An event coordinator estimated that 56,000 people would attend a concert but it was found that she has a 7% error. What are the two possible values for the actual number of attendees?

$$\begin{array}{l|l} \frac{1.07x = 56000}{1.07 \quad 1.07} & \frac{0.93x = 56000}{0.93 \quad 0.93} \\ \hline x = & x = \\ \hline \end{array}$$

52336 people or 60215 people

