

Name: _____

Greatest Possible Error and Percent Error Notes

7th Grade Math

Finding the Greatest Possible Error (GPE) is one half ($\frac{1}{2}$) of that measuring unit.

For example the GPE of 14.6ft

1. The 6 is in the tenths column which is 0.1

$$* .1 = .05$$

Find the GPE of the following (make sure to include the units)

a. 54.67 ft

b. 34.1 cm

c. 35.678 in

$$\frac{1}{2} \cdot .01 \text{ ft} \\ .005 \text{ ft}$$

$$\frac{1}{2} \cdot .1 \text{ cm} \\ .05 \text{ cm}$$

$$\frac{1}{2} \cdot .001 \text{ in} \\ .0005 \text{ in}$$

Do you notice a pattern? If so, what is it?

The GPE ends in a "5"

Using the pattern complete the following GPE

a. 15.25ft

b. 34.467 cm

c. 15 ft

$$.005 \text{ ft}$$

$$.0005 \text{ cm}$$

$$.5 \text{ ft}$$

d. 13.4cm

e. 81.324mm

f. 13.0 lbs

$$.05 \text{ cm}$$

$$.0005 \text{ mm}$$

$$.5 \text{ lbs}$$

Percent Error Notes

Formula for Percent Error=

$$\frac{GPE}{\text{Measurement}}$$

Example: Find the Percent Error of 42.3cm to the nearest tenth of a percent.

$$\frac{.05 \text{ cm}}{42.3 \text{ cm}} = .001182033 \rightarrow .1182033\% \rightarrow .1\%$$

1. 4.007 oz

$$\frac{.000507}{4.00707} = .00012428$$

.01%

2. 15.6 in

$$\frac{.05 \text{ in}}{15.6 \text{ in}} = .003205$$

.32%

3. 23 cm

$$\frac{.5 \text{ cm}}{23 \text{ cm}} = .021739$$

2.17%

4. 6.57 lbs

$$\frac{.005 \text{ lbs}}{6.57 \text{ lbs}} = .00076103$$

.08%

5. 13.4 ft

$$\frac{.05 \text{ ft}}{13.4 \text{ ft}} = .003731$$

.37%

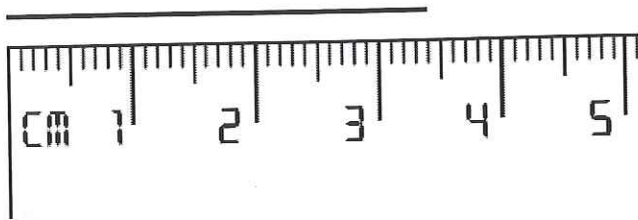
6. 13.445 cm

$$\frac{.0005 \text{ cm}}{13.445 \text{ cm}} = .00003718$$

.0037%

7. Find the Percent Error of the line.

$$\frac{.05 \text{ cm}}{3.4 \text{ cm}} = .0147 = 1.47\%$$



8. Find the Percent Error of the bolt.

$$\frac{.05 \text{ m}}{6.5 \text{ m}} = .00769$$

.77%

