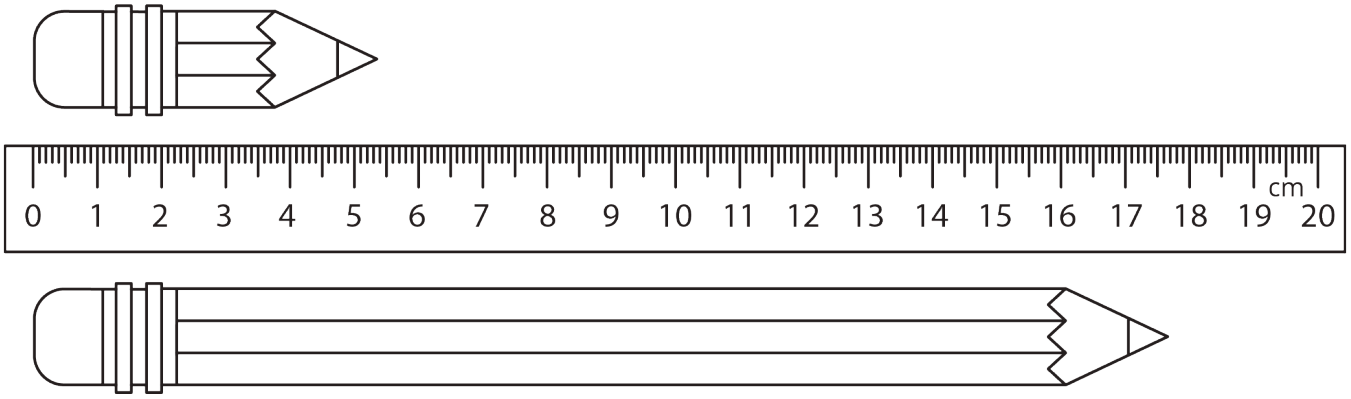
Measurement Error

Let's check how accurate our calculations are.

7.1 How Long Are These Pencils?



1. Estimate the length of each pencil.

2. How accurate are your estimates?

3. For each estimate, what is the largest possible percent error?

7.2 How Long Are These Floor Boards?

A wood floor is made by laying multiple boards end to end. Each board is measured with a maximum percent error of 5%. What is the maximum percent error for the total length of the floor?

7.3 Measurement Error for Area

Imagine that you measure the length and width of a rectangle and you know the measurements are accurate within 5% of the actual measurements. If you use your measurements to find the area, what is the maximum percent error for the area of the rectangle?

7.4 Measurement Error for Volume

1. The length, width, and height of a rectangular prism were measured to be 10 cm, 12 cm, and 25 cm. Assuming that these measurements are accurate to the nearest cm, what is the largest percent error possible for:

   a. each of the dimensions?

   b. the volume of the prism?

2. For a different rectangular prism, the length, width, and height each have a maximum percent error of 1%. What is the largest percent error possible for the volume of the prism?