Similar Figures and Proportions: Putting It All Together!

Note: Remember that when setting up a proportion for similar figures, the similar sides must be on the same level, meaning both in the denominator or both in the numerator. For example:

12ft 6ft

 20ft 10ft

 $\frac{12}{20}=\frac{6}{10}$

Ex. Nate is 6 feet tall and casts a shadow 15 feet long. At the same time, a nearby flagpole casts a shadow 95 feet long. What is the height of this flagpole?

Ex. Matryoshka dolls are Russian nesting dolls. To nest properly, the dolls must be similar figures. If the largest doll has a height of 15 cm and a base width of 6 centimeters, which of the dimensions could belong to a smaller nesting doll? Circle all that apply.

1. 7.5cm tall, 3cm wide
2. 7cm tall, 2cm wide
3. 10cm tall, 3cm wide
4. 12cm tall, 4cm wide
5. 3cm tall, 1cm wide
6. 5cm tall, 2cm wide

How about we look at scale drawings now. A scale drawing is a representation of an actual object. The scale tells how to reduce or enlarge the dimensions of a scale drawing. Scale drawings are similar to and, therefore, proportional to the actual object.

Ex. Ray went to visit the Great Pyramids. He learned that the base length of each triangular face is about 750ft. He wants to make a scale drawing of the pyramids using the scale 1in = 150ft. What will be the base length of his scale drawing?

Ex. Madison made a scale drawing of an elephant for her bff’s birthday. If the length of the scale drawing is 1.5in, and the scale she used was $\frac{1}{4}$ = 2ft, what is the actual length of the elephant?



Ex. Charlotte is 245 miles away from Atlanta. You are prepping for the awesome field trip in May, and you want to create a map of where you are going. The scale that you are using is $\frac{1}{2}$ inch = 15 miles. How far apart should you draw the two cities on the map?

Ex. The length between consecutive bases on a major league baseball diamond is 90 feet. Alvin wants to make a scale drawing of a baseball field. If the bases are $2\frac{1}{2}$ inches apart on his scale drawing, what is Alvin’s scale?