

Problems – Similar figures/solids

Discuss these problems in small groups.

Problems 1-2: find at least two different ways to solve each problem.

Problems 3-5: How do the quantities in these problems compare? (I.e. are they proportional? In what way? Why?) Predict the mistakes that students might make.

1. Find all sides of the triangle that has perimeter 100 and is similar to the triangle with sides 3, 5, and 7.
2. Find all sides of the triangle whose angles are 30° , 60° , and 90° , and area is 10.
3. Two prisms are similar. The first prism has surface area 28 square units and volume 4 cubic units. The second prism has surface area 63 square units. Find its volume.
4. One gallon of paint was used to paint a 12 feet \times 10 feet room. How much paint will be needed to paint a 20 feet \times 15 feet room? If paint can be bought only in containers of 1 gallon, $1/2$ gallon, and $1/4$ gallon, how much paint will have to be bought for the second room?
5. Katya has a set of 400 Lego pieces. Using this set, she made a house that is 10 cm long, 10 cm wide, and 8 cm high. Approximately how many pieces will she need to make a house that is 30 cm long, 20 cm wide, and 20 cm high?