1. Suppose you have a rectangle with sides of length 2 and 5.5. You would like to draw another rectangle whose sides are proportional to those of your original, but with smaller side of length 3.4. How big must the larger side be?

   Note: You may recall from geometry that when two rectangles have the same shape – that is, when their sides are proportional – we say they are *similar*.

2. Suppose you have a right triangle whose legs have length 4 and length 7. You would like to draw a *similar* right triangle whose smaller leg has length 5. How long should the second leg be? How about the hypotenuse?

3. You are a set-designer. A band named Spinal Tap asks you to make a scale model "of Stonehenge". They give you a napkin upon which is sketched two upright stones with a horizontal lintel across the top, and a notation that says to make the model 18" high. You do your research, and you learn that the portion of Stonehenge they sketched for you is called a *trilithon*, and that at Stonehenge, three trilithons remain. It's difficult to find measurements, but you learn that the upright stones of the tallest trilithon are $24'$ high, and that the lintel (that has fallen off) is $15'$ wide. You carefully estimate that the lintel is $4.8'$ tall, and $6'$ deep.

   (a) How tall would the trilithon be if the lintel were put back on?

   (b) How wide and deep do you need to make your scale model? How tall should the upright stones in your model be?