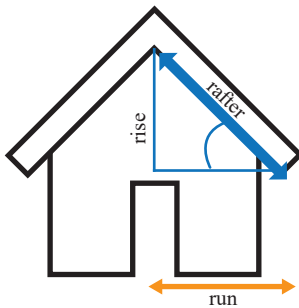


9.3 PROJECT

MAN CAVES AND SHE SHEDS

The company *Tiny House Livings* is gearing up for their annual Man Cave and She Shed Competition. Every year the competition focuses on different features; this year's focus is the roof. The main contest restrictions this year are that you cannot measure anything directly with a tape measure, you must use your height and the length of your hand to "measure," and then you must provide the pitch angle and rafter length.



Suppose that you have always dreamed of owning one but haven't had a chance to save up the money to buy one nor the tools and materials to build one. Thanks to the competition, you now have the chance to win one! Use your own hand length as the standard unit of measurement.

1. Refer to the sketch provided of a man cave or she shed. First, estimate your height in hands and then estimate that the end of the roof overhang is 4 hands above your head. How high is the end of the roof overhang from the ground?
2. You use the length of your hand to measure the run of one side of the shed roof, which is half the width of the shed. You discover the run is twenty "hands" long. What is the length of the run in inches?
3. You estimate the rise to be 8 "hands" high. What is the pitch angle of the roof?
Hint: Pay attention to your units!
4. What is the length of the rafter?
5. What influences the accuracy of your calculations? What can you do to make the estimations more precise?