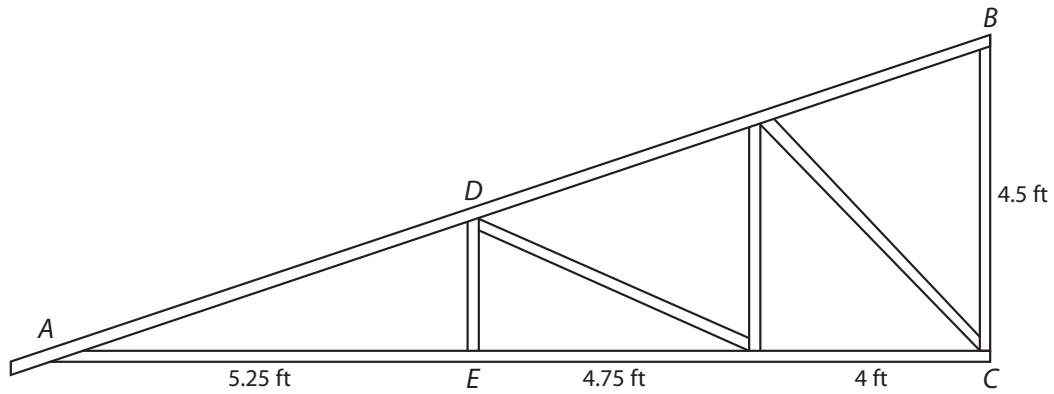


Problem-Based Task 1.6.2: True Trusses

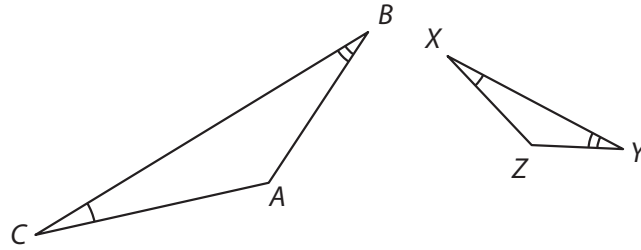
A mono truss is a type of building support structure that is in the shape of a right triangle. Contractors often use mono trusses when building roofs for small structures such as garages and sheds. The vertical pieces of this truss form 90° angles with the horizontal pieces in order to maximize the stability. Observe the diagram of a mono truss below. Is $\triangle ABC$ similar to $\triangle ADE$? Explain your reasoning. Is it possible to determine the length of \overline{DE} from the given information? If so, calculate the length.



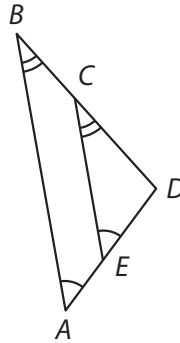
Practice 1.6.2: Applying Similarity Using the Angle-Angle (AA) Criterion

Decide whether each pair of triangles is similar. Explain your answer.

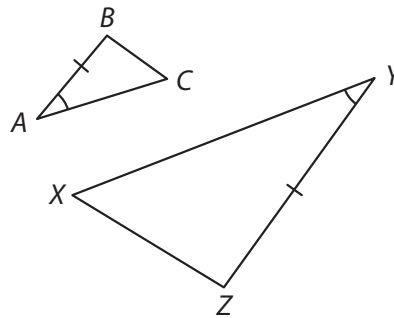
1.



2.

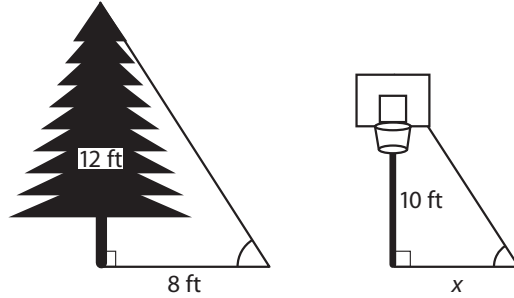


3.

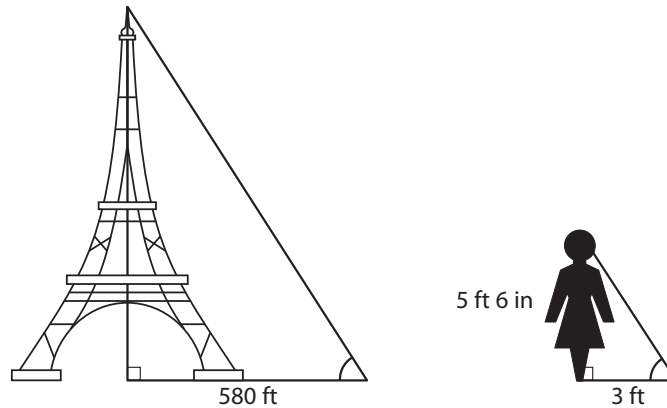


Use the definition of similarity to solve each problem.

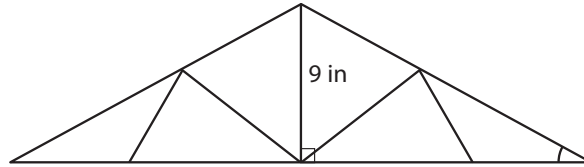
7. At a certain time of day, a tree that is 12 feet tall casts a shadow that is 8 feet long. Find the length of the shadow that is created by a 10-foot-tall basketball hoop at the same time of day.



8. Sheila is standing near the Eiffel Tower in Paris, France. The shadow of the monument is 580 feet long, and Sheila's shadow is 3 feet long. If Sheila is 5 feet 6 inches tall, how tall is the monument?



9. The support beams of truss bridges are triangles. James made a model of a truss bridge with a scale of 1 inch = 4 feet. If the height of the tallest triangle on the model is 9 inches, what is the height of the tallest triangle on the actual bridge?



10. A statue that is 25 feet tall casts a shadow that is 16 feet long. A cement post next to the statue is 4 feet tall. Find the length of the cement post's shadow.

