

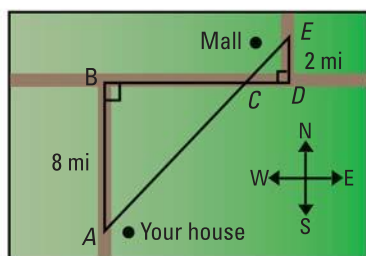


Lessons 6.4–6.7

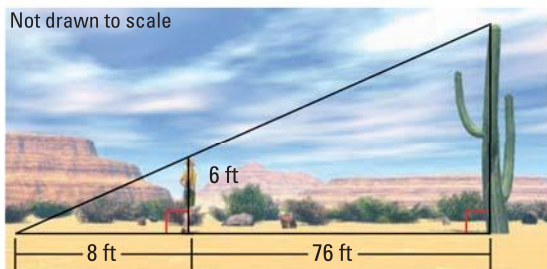
1. **OPEN-ENDED** The diagram shows the front of a house. What information would you need in order to show that $\triangle WXY \sim \triangle VXZ$ using the SAS Similarity Theorem?



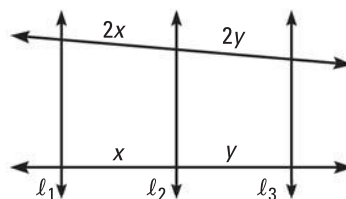
2. **EXTENDED RESPONSE** You leave your house to go to the mall. You drive due north 8 miles, due east 7.5 miles, and due north again 2 miles.



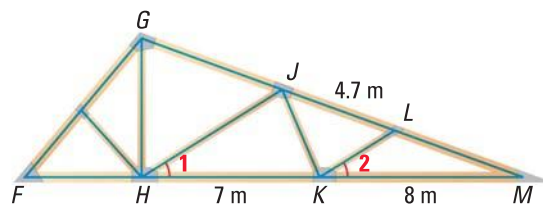
- Explain how to prove that $\triangle ABC \sim \triangle EDC$.
 - Find CD .
 - Find AE , the distance between your house and the mall.
3. **SHORT RESPONSE** The Cardon cactus found in the Sonoran Desert in Mexico is the tallest type of cactus in the world. Marco stands 6 feet from the cactus so that his shadow coincides with the cactus' shadow. Marco is 6 feet tall and his shadow is 8 feet long. How tall is the Cardon cactus? *Explain.*



4. **SHORT RESPONSE** In the diagram, is it *always*, *sometimes*, or *never* true that $l_1 \parallel l_2 \parallel l_3$? *Explain.*



5. **GRIDDED ANSWER** In the diagram of the roof truss, $HK = 7$ meters, $KM = 8$ meters, $JL = 4.7$ meters, and $\angle 1 \cong \angle 2$. Find LM to the nearest tenth of a meter.



6. **GRIDDED ANSWER** You are designing a catalog for a greeting card company. The catalog features a $2\frac{4}{5}$ inch by 2 inch photograph of each card. The actual dimensions of a greeting card are 7 inches by 5 inches. What is the scale factor of the reduction?
7. **MULTI-STEP PROBLEM** Rectangle $ABCD$ has vertices $A(2, 2)$, $B(4, 2)$, $C(4, -4)$, and $D(2, -4)$.
- Draw rectangle $ABCD$. Then draw a dilation of rectangle $ABCD$ using a scale factor of $\frac{5}{4}$. Label the image $PQRS$.
 - Find the ratio of the perimeter of the image to the perimeter of the original figure. How does this ratio compare to the scale factor?
 - Find the ratio of the area of the image to the area of the original figure. How does this ratio compare to the scale factor?