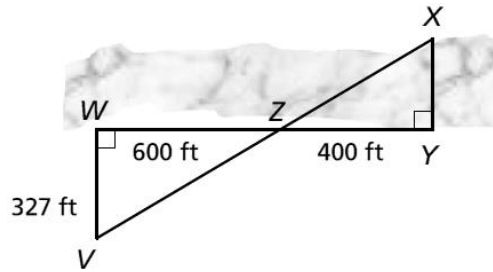


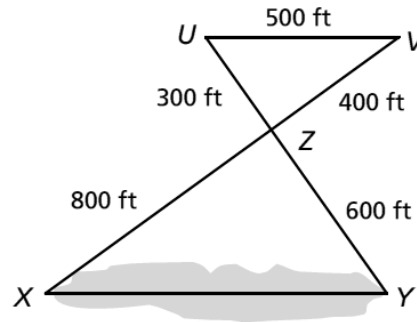
**6.6.D1 – Application of Similar Triangles**

For each problem situation, set up and solve a proportion.

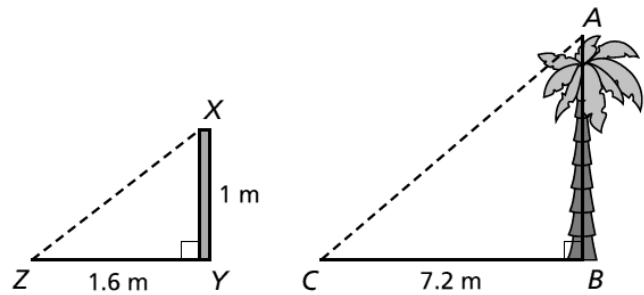
- To find the distance  $\overline{XY}$  across a canyon, you locate points as shown in the figure. What is the distance across the canyon?



- To find the distance across a lake, you locate points as shown in the figure. What is the distance across the lake?

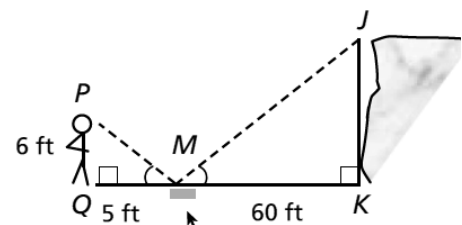


- In order to find the height of a palm tree, you measure the tree's shadow and, at the same time of day, you measure the shadow cast by a meter stick that you hold perpendicular to the ground. The measurements are shown in the figure. Find the height of the tree.

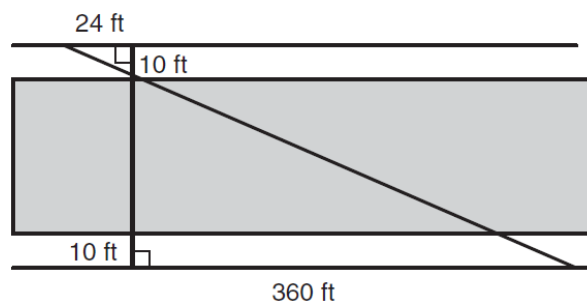


- A flagpole 3 meters tall casts a shadow 5 meters long, at the same time that a building nearby casts a shadow 62 meters long. How tall is the building?

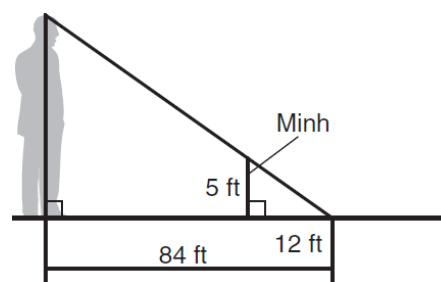
- In order to find the height of a cliff, you stand at the bottom of the cliff, walk 60 feet from the base, and place a mirror on the ground. Then you face the cliff and step back 5 feet so that you can see the top of the cliff in the mirror. Assuming your eyes are 6 feet above the ground, what is the height of the cliff?



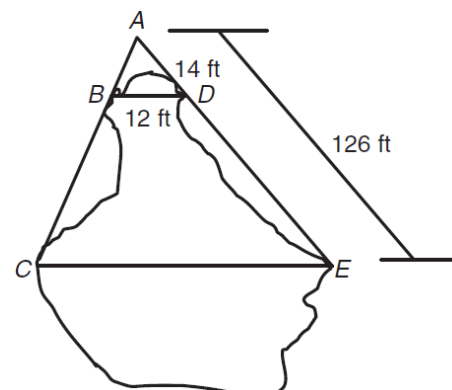
6. Elle and Jeff are on opposite sides of a canyon that runs east to west, according to the graphic. They want to know how wide the canyon is. Each person stands 10 feet from the edge. Then, Elle walks 24 feet west, and Jeff walks 300 feet east. What is the width of the canyon?



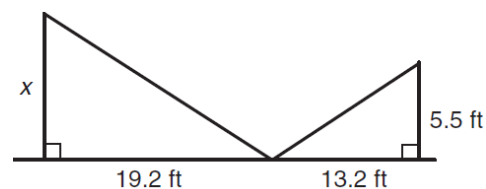
7. Minh wanted to measure the height of a statue. She lined herself up with the statue's shadow so that the tip of her shadow met the tip of the statue's shadow. She marked the spot where she was standing. Then, she measured the distance from where she was standing to the tip of the shadow, and from the statue to the tip of the shadow. What is the height of the statue?



8. Andre is making a map of a state park. He finds a small bog, and he wants to measure the distance across the widest part. He first marks the points A, C, & E. Andre measures the distance shown on the image. Andre also marks point B along AC and point D along AE, such that BD is parallel to CE. What is the width of the bog, as the widest point?



9. Keisha is visiting a museum. She wants to know the height of one of the sculptures. She places a small mirror on the ground between herself and the sculpture, then she backs up until she can see the top of the sculpture in the mirror. What is the height of the sculpture?



10. You want to measure the height of a tree at the community park. You stand in the tree's shadow so that the tip of your shadow meets the tip of the tree's shadow on the ground, 2 meters from where you are standing. The distance from the tree to the tip of the tree's shadow is 5.4 meters. You are 1.25 meters tall. Draw a diagram to represent the situation and then calculate the height of the tree.