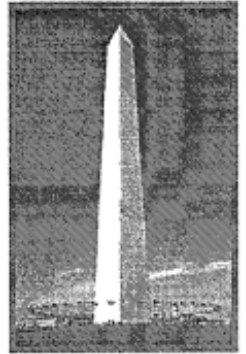


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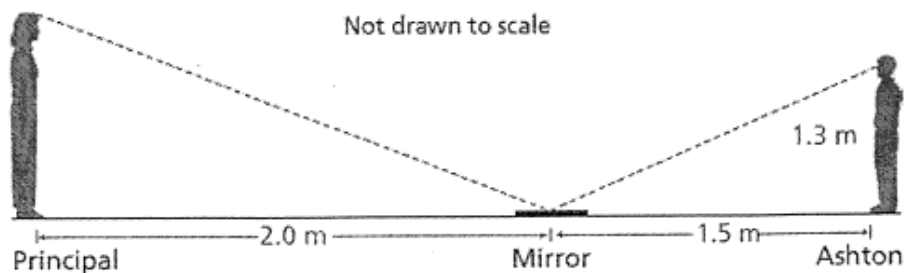
### Indirection Measurements Practice

1. The Washington Monument is the tallest structure in Washington, D.C. At the same time the monument casts a shadow that is about 500 feet long, a 40-foot flagpole nearby casts a shadow that is about 36 feet long. Make a sketch. Find the approximate height of the monument.

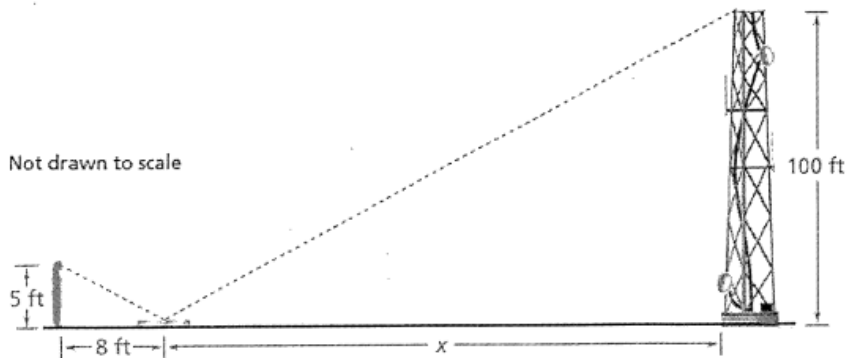


2. Darius uses the shadow method to estimate the height of a flagpole. He finds that a 5-foot stick casts a 4-foot shadow. At the same time, he finds that the flagpole casts a 20-foot shadow. Make a sketch. Use Darius's measurements to estimate the height of the flagpole.

3. The school principal visits Ashton's class one day. The principal asks Ashton to show her what they are learning. Ashton uses the mirror method to estimate the principal's height. This sketch shows the measurements he records. How tall is Ashton's principal?

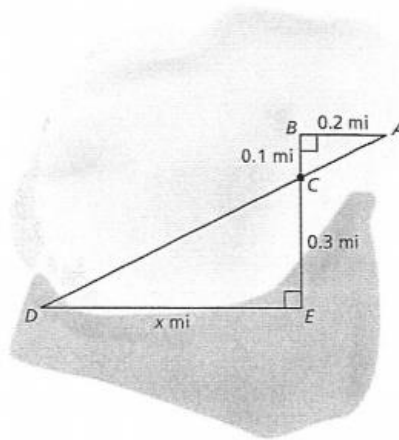


4. Stacia stands 8 feet from a mirror on the ground. She can see the top of a 100-foot radio tower in the center of the mirror. Her eyes are 5 feet from the ground. How far is the mirror from the base of the tower?

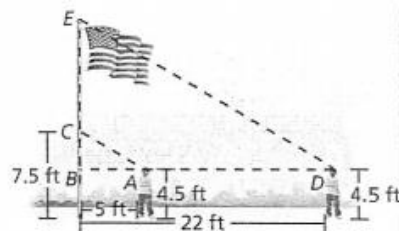


5. You are on a boat in the ocean, at Point  $A$ . You locate a lighthouse at Point  $D$ , beyond the line of sight of the marker at point  $C$ . You drive 0.2 mile west to Point  $B$  and then 0.1 mile south to Point  $C$ . You drive 0.3 mile more to arrive at Point  $E$ , which is due east of the lighthouse.

- Explain why  $\triangle ABC$  and  $\triangle DEC$  are similar.
- What is the distance from Point  $E$  to the lighthouse?



6. You can use indirect measurement to estimate the height of a flag pole. First measure your distance from the base of the flag pole and the distance from the ground to a point on the flag pole that you are looking at. Maintaining the same angle of sight, move back until the top of the flag pole is in your line of sight.



- Explain why  $\triangle ABC$  and  $\triangle DBE$  are similar.
- What is the height of the flag pole?