Name: _____ Date: _____ Period: _____

Indirect Measurement Homework

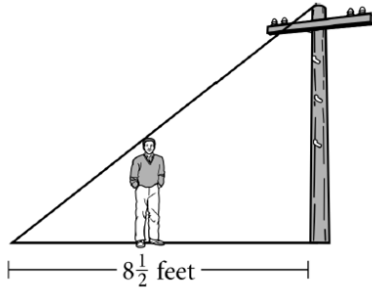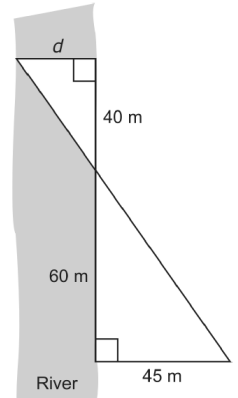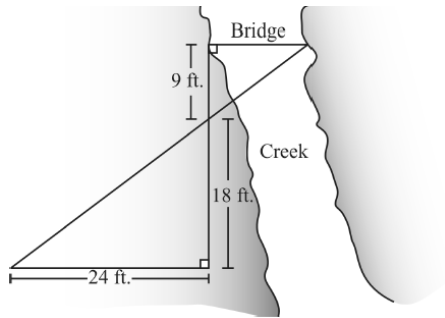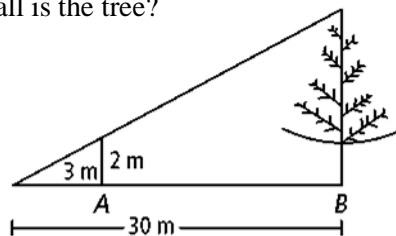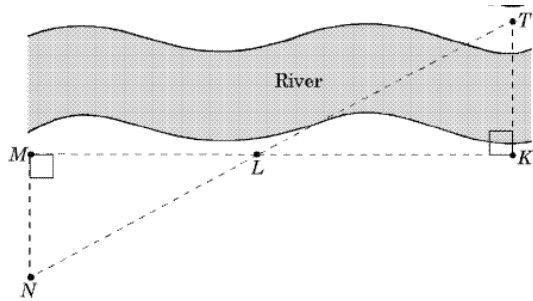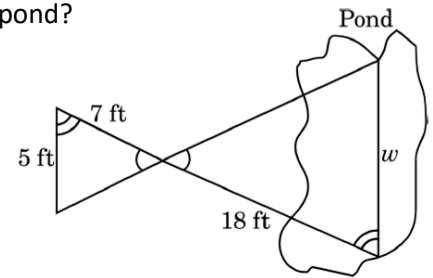|	
1. Lloyd is standing near a telephone pole as shown in the figure below. When his head touches the support wire , he is 2 ½ feet from where the wire meets the ground. If Lloyd is 5 feet tall how tall is the telephone pole? $8\frac{1}{2}$ feet	2. A surveyor takes the measurements shown in the diagram to the right. What is the distance across the river? d 40 m 60 m River 45 m
3. Mr. Lui wants to build a bridge across the creek that runs through his property. He made measurements and drew the map shown to the right. Based on this map, what is the distance across the creek at the place where Mr. Lui wants to put the bridge? Bridge 9 ft. Creek 18 ft. 24 ft.	4. At 4:00 PM on a sunny day, a stick 2 feet tall casts a 5 feet long shadow. At the same time, a tree nearby cases a shadow 55 feet long. What is the height of the tree?
5. A stick 2 m long is placed vertically at point B. The top of the stick is in line with the top of a tree as seen from point A, which is 3 m from the stick and 30 m from the tree. How tall is the tree? 3 m 2 m A B 30 m	6. A flagpole casts a shadow 27 feet long. Larry is a 6 ft tall and casts a 5 ft shadow. How tall is the flagpole Round to the nearest tenth if necessary.

7. Sara and her friend used similar triangles to find a relationship between the width of the river and the distance MN. If ΔLMN is similar to ΔLKT, and the measure of angle N is 62°, which angle has the same measure as angle N? _River_ _T_ _M_ _L_ _K_ _N_	**8.** Jake wanted to measure the width of the pond so he drew this diagram of two similar triangles. What is the width of the pond? _Pond_ 7 ft 5 ft 18 ft _w_
9. A tree casts a 32 foot shadow at the same time of the day when a 3 foot yardstick casts an 8 foot shadow. How tall is the tree?	**10.** A tower is 160 feet tall casts a shadow 34 feet long. A person standing next to the tower casts a shadow 1.5 feet long. What is the height of the person?
11. Jason is 6 feet tall, and at 6 pm, his shadow was 15 feet long. At the same time, a tree next to Jason had a 25-foot shadow. What is the height, in feet, of tree?	**12.** The sun causes a flagpole to cast a shadow that measures 122 ft. from the base of the pole. At the same time of the day, a 5.7 ft tall basketball player casts a shadow that measures 9.5 ft. **a**. What is the scale factor relating the height of the ball player to his shadow's length? Express your answer as a fraction in lowest term. **b**. Determine the height of the flagpole. Express your answer to the nearest tenth of a foot. **c**. The basketball player's little sister is 4 ft. tall. At the same time of the day, determine her shadow's length to the nearest tenth of a foot.