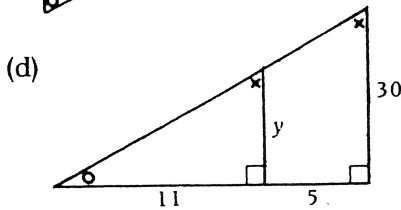
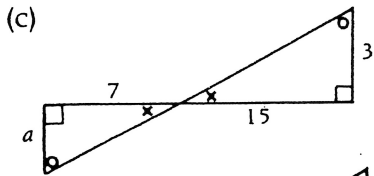
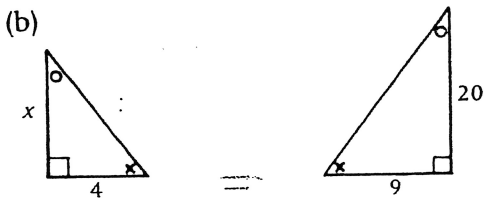
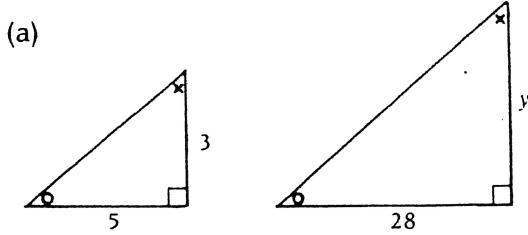


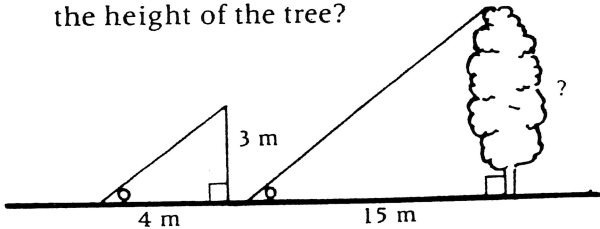
Note: diagrams are not drawn to scale!

## SOLVING PROBLEMS USING SIMILAR TRIANGLES

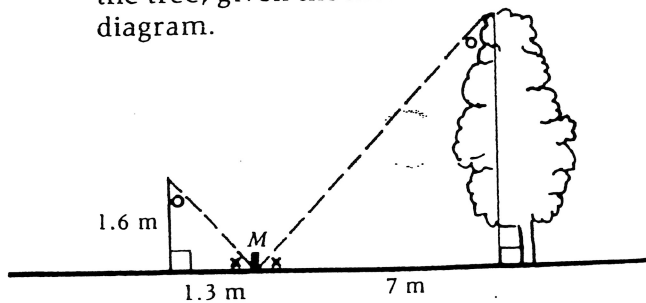
3. Use similar triangles to find the unknown side in each of the following.



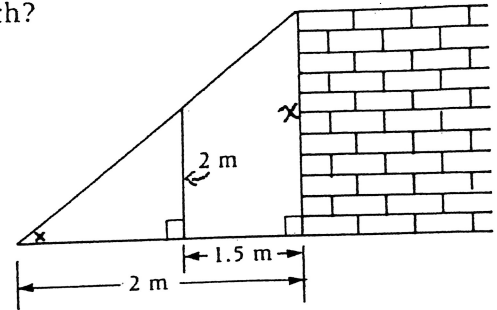
4. A pole 3 m high casts a 4 m shadow. A nearby tree casts a 15 m shadow. What is the height of the tree?



5. To find the height of a tree, Susan places a mirror on the ground and stands where she can see the reflection of the tree top in the mirror. Determine the height of the tree, given the measurements in the diagram.

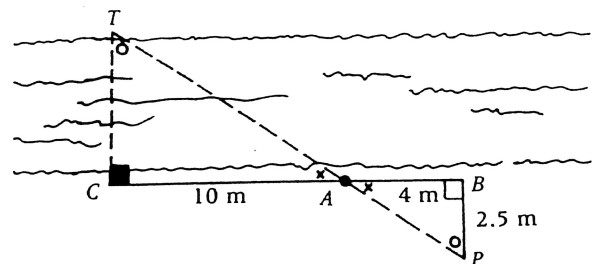


6. A ladder is placed with its foot 2 m from a wall. The ladder touches the top of a 2 m fence that is 1.5 m from the wall. How high up the wall does the ladder reach?

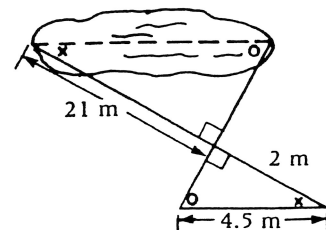


7. A student, 1.8 m tall, casts a 4 m shadow at the same time that a tower casts a 16 m shadow. Determine the height of the tower.

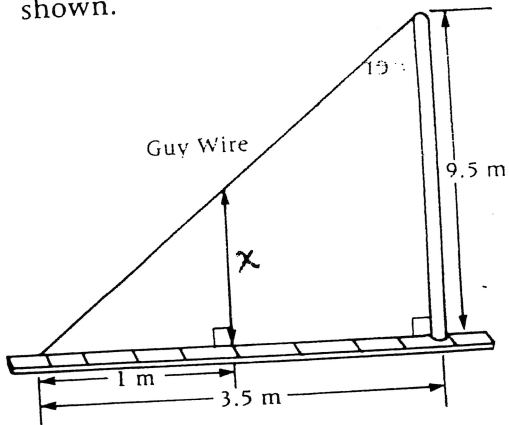
8. Two students, Phil and Alfredo, take measurements as shown in order to determine the width of a river. Find the width of the river.



9. Use the measurements shown on the diagram to determine the approximate length of the pond to the nearest metre.

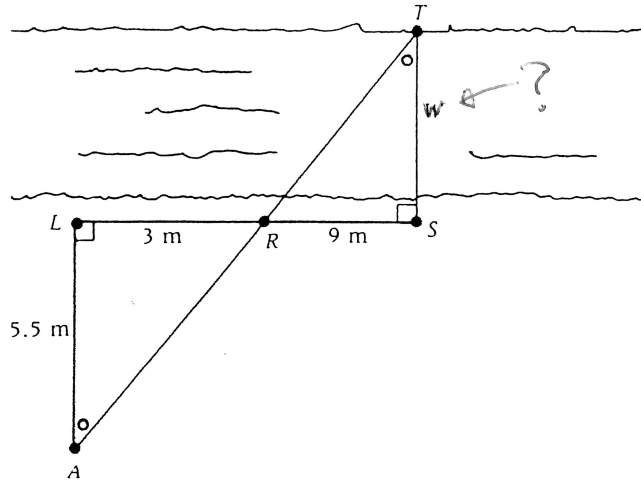


10. A guy wire supports a vertical pole as shown.



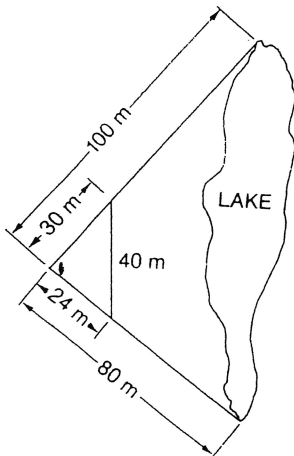
Using the dimensions given, calculate the clearance at the edge of the sidewalk away from the pole, correct to 2 decimal places.

11. To find the distance across a river, Lori and Amy set up stakes at  $S$ ,  $R$ ,  $L$ , and  $A$  as shown. They put  $A$  and  $R$  in line with a tree at  $T$  across the river. Then they calculated the width of the river using the measurements shown.



What was the width of the river? ( $W$ )

12. Find the ~~width~~<sup>length</sup> of the lake.



## ANSWERS

3. (a) 16.8 (c) 1.4  
 (b) 8.9 (d) 20.6
4. 11.25m
5. 8.62 m
6. 8 m
7. 7.2 m
8. 6.25 m
9. 47 m
10. 2.71 m
11. 16.5 m
12. 133.3 m