_____
Name

1. Find the missing length.
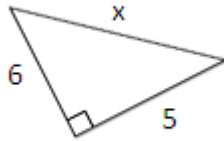
a)   b)
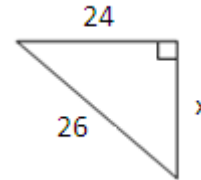
6. In a right triangle, the sin A = 5/13. What is cos A and tan A? (Hint: sin A = 5/13 gives you two of the sides of the right triangle. Draw the picture and label what you know. Then figure out the answer.)

7. Angle B is the complement (the other acute angle of the triangle) of angle A in the question above. What is sin B and tan B?

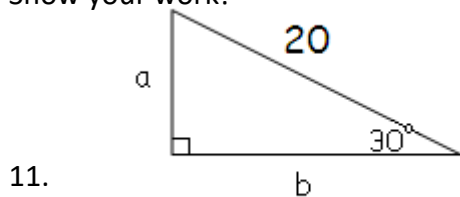8. Fill in the blank: a) $\cos 15^0 = \sin$ _____   b) $\sin 55° = \cos$ ____

9. In a right triangle, the cos A = 4/7. What is sin A and tan A?
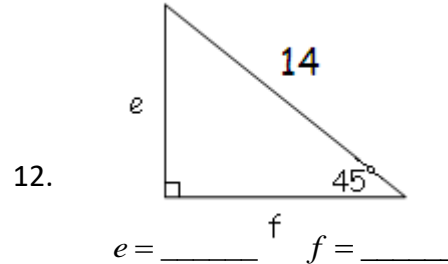
10. In a right triangle, the tan A = 5/6. What is sin A and cos A?

Solve for the missing lengths, round answers to the nearest 1/10th.
Show your work!

11.   12.

$a =$ _____ $b =$ _____ $e =$ _____ $f =$ _____

13. A building is casting a 140 foot shadow. If a post nearby is casting a 14 inch shadow and the post is 8 feet tall, how tall is the building? (Hint: similar triangles)

14. Romeo is bringing Juliet flowers. Juliet's balcony is 20 feet above the ground. Romeo needs to bring a ladder to reach Juliet. He knows from his math class that a safe angle of elevation for a ladder to be stable is 58°.

    a. Draw the picture.

    b. Find the length of the ladder that Romeo must bring with him to attempt to reach Juliet.

c. How far is bottom of the ladder from the base of the building? (Assume the balcony sides go straight down to the ground.)

15. You decide to make a patio coming out of your back door. It will be rectangular in shape, with the dimensions 20 ft long by 15 ft wide. In order to make sure that you truly have a rectangle you read in a "How to Build a Patio" book that the measure of the diagonals must be the same. What must the diagonal measure be, to the nearest tenth, to insure the patio is rectangular?

16. Use the information in the figure to find the distance x to 2 decimal places from the boat to the base of the cliff.

Vertical cliff   Horizontal line

18°

70.0 m

x
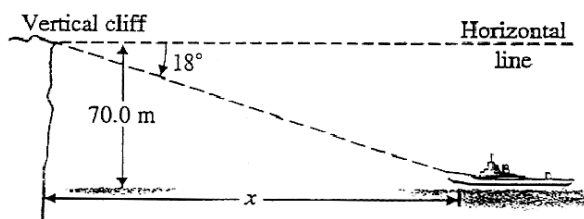
17. You are on a boat 1 mile from the base of the light house. You use a sextant and measure the angle of elevation to the top of the light house to be 3°. How high above the ocean, in feet, is the top of the lighthouse?

18. Triangle ABC is *NOT* a right triangle. A = 52, B = 65, a = 27, c = 35. Find the area of triangle ABC.

19. Triangle ABC is *NOT* a right triangle. A = 21, B = 55, a = 15, c = 29. Find the area of triangle ABC.