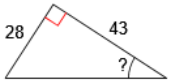
Tougher Trig

Name_____

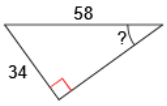
Warm Up:

Find the measure of the indicated angle to the nearest degree.

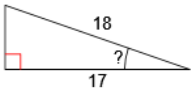
1)



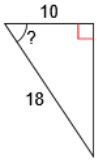
2)



3)

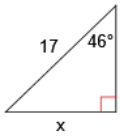


4)

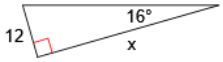


Find the missing side. Round to the nearest tenth.

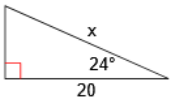
5)



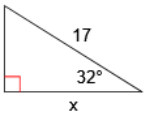
6)



7)

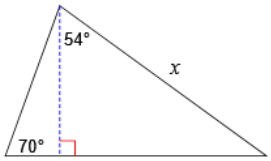


8)



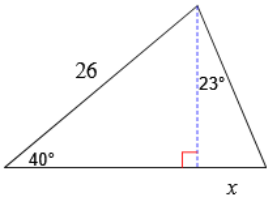
Find the length of the side labeled *x*. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

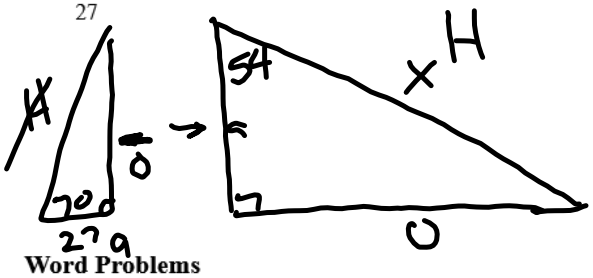
9)



27

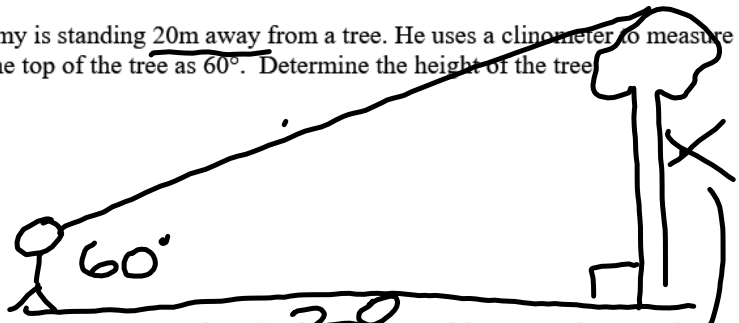
10)



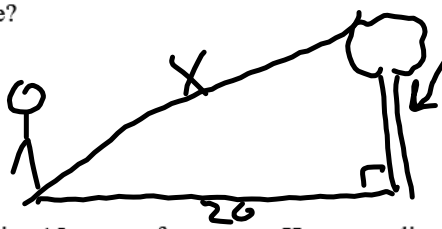


Word Problems

11) Jimmy is standing 20m away from a tree. He uses a clinometer to measure the angle of elevation to the top of the tree as 60°. Determine the height of the tree.



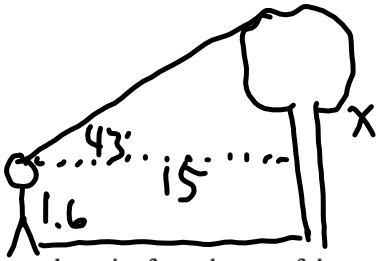
b. Jimmy wants to attach a wire from the top of the tree to the ground where he is standing. How long is the wire?



Pythagorus

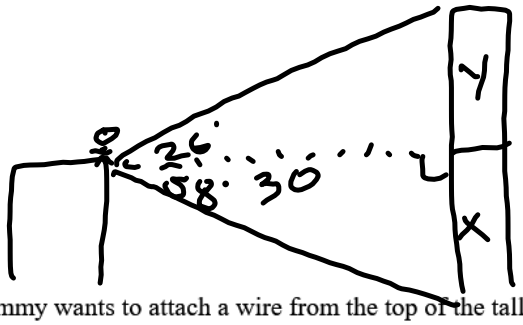
12) Jimmy is standing 15m away from a tree. He uses a clinometer to measure the angle of elevation to the top of the tree as 43°. His eyes are 1.6m above the ground. Determine the height of the tree.

height = X + 1.6



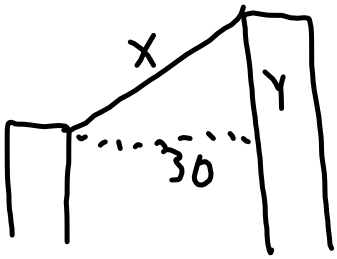
b. Jimmy wants to attach a wire from the top of the tree to the ground where he is standing. How long is the wire?

13) Jimmy is standing at the edge of the roof of a building. 30m away there is a taller building. The angle of elevation to the top of the taller building is 26°. The angle of depression to the bottom of the taller building is 58°. Determine the height of the 2 buildings.

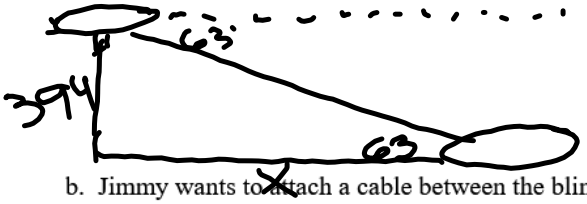


Tall building
X + Y
Short building
X

b. Jimmy wants to attach a wire from the top of the taller building to the top of the shorter building. Determine the length of wire he needs.

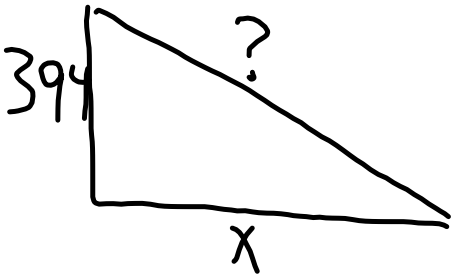


14) A blimp is flying towards its landing pad. It is 394m above the ground. The angle of depression to the landing pad is 63°. Determine the horizontal distance to the landing pad.

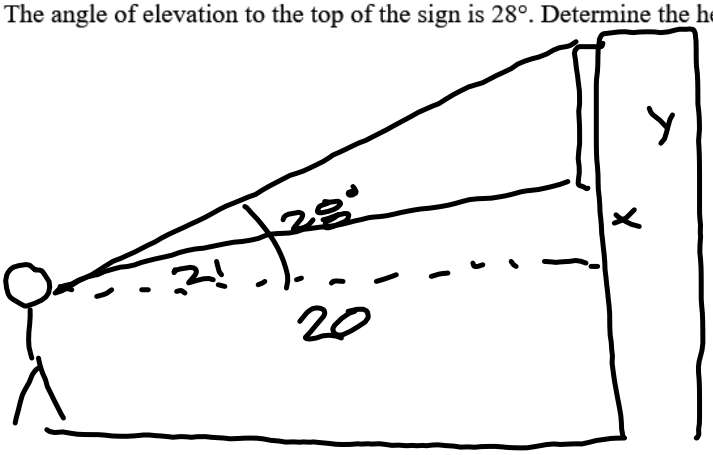


b. Jimmy wants to attach a cable between the blimp and the landing pad. How long does the cable need to be?

Pythagorus



15) Jimmy is standing 20m away from a building. The angle of elevation to the bottom of a sign is 21°. The angle of elevation to the top of the sign is 28°. Determine the height of the sign.



height of sign
$y - x$

Answers to Tougher Trig

1) 33°
2) 36°
3) 19°
4) 56°
5) 12.2
6) 41.8
7) 21.9
8) 14.4
9) 126.2
10) 7.1
11) 34.6m b. 40m
12) 15.6m b. 21.6m
13) short=48m tall=62.6m b. 33.4m
14) 200.8m b. 442.2m
15) 2.96m