

12. $A = 66^\circ$, $b = 9$, $a = 14$

$B = 35.96^\circ$

$C = 78.04^\circ$

$c = 14.99$

13. $a = 4$, $b = 5$, $c = 7$

$C = 101.54^\circ$

$B = 44.42^\circ$

$A = 34.04^\circ$

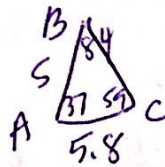
Find the area to the nearest tenth. Show all work.

14. $a = 5$, $b = 6$, $c = 7$

$S = 9$

$A = 14.7$

15. $A = 37^\circ$, $B = 84^\circ$, and $c = 5$



$A = 8.73$

16. $a = 14$, $b = 16$, $c = 6$

$S = 18$

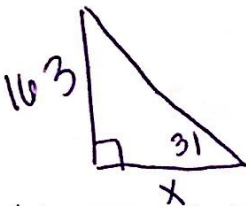
$A = 41.57$

17. $C = 28^\circ$, $a = 14$, $b = 9$

$A = 29.58$

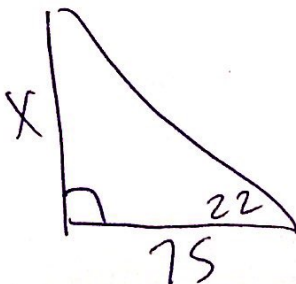
Draw the triangle and show all work. Round answers to the nearest tenth.

18. From the top of a lighthouse 163 ft above sea level the angle of depression of a ship at sea is 31° . Find the distance of the ship from the base of the lighthouse.



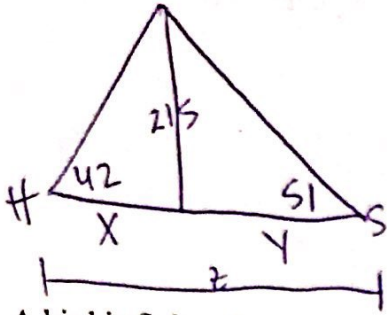
$x = 271.28 \text{ ft}$

19. A tree casts a shadow on the ground because of the sun's rays. The length of the shadow is 75 ft. The angle of elevation is 22° . Find the height of the tree.



$x = 30.3 \text{ ft}$

20. Harry and Sally are on the opposite sides of a tower that is 215 meters high. They each measure their angle of elevation to the top of the tower as 42° and 51° respectively. Find the distance between Harry and Sally.



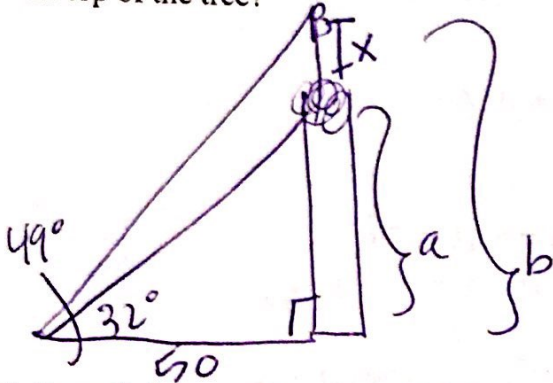
$$\tan 51 = \frac{215}{y}$$

$$\tan 42 = \frac{215}{x}$$

$$z = x + y$$

$$z = 412.89$$

21. A bird is flying above a tree. You are standing 50 feet away from the tree. The angle of elevation to the top of the tree is 32° , and the angle of elevation to the bird is 49° . What is the distance from the bird to the top of the tree?



$$\tan 32 = \frac{a}{50}$$

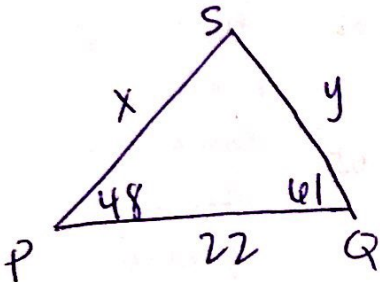
$$\tan 49 = \frac{b}{50}$$

$$x = b - a$$

$$x = 26.27 \text{ ft}$$

22. From lighthouses P and Q which lie on a straight line, 22 km apart, a disabled ship S is sighted. If

$\angle SPQ = 48^\circ$ and $\angle SQP = 61^\circ$, find the distance from S to the nearer lighthouse.



$$\frac{\sin 48}{y} = \frac{\sin 71}{22}$$

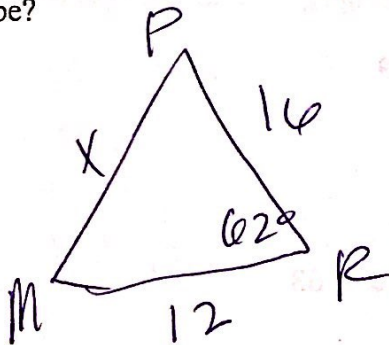
$$\frac{\sin 71}{22} = \frac{\sin 61}{x}$$

$$y = 17.29$$

$$x = 20.35$$

↑ closer

23. Monica, Rachel, and Phoebe are camping and set up their tents in a triangle. Monica and Rachel are 12 feet apart and Phoebe and Rachel are 16 feet apart. The angle at Rachel is 62° . How far apart are Monica and Phoebe?



$$x = 14.82 \text{ ft}$$