Honors Physics Name_____

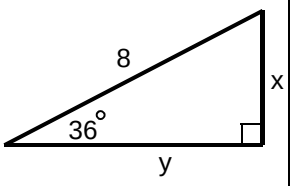
Worksheet – Trigonometry Applications WS Date_____Period_____

PART A: For each of the following, write the equation to find the missing value. Then rewrite the equation that you will enter in your calculator. Round your final answer to 3 Sig Figs.

1.

x ≈ _____

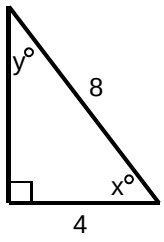
y ≈ _____



2.

x ≈ _____

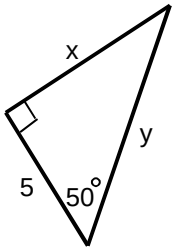
y ≈ _____



3.

x ≈ _____

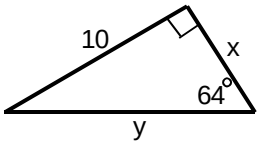
y ≈ _____



4.

x ≈ _____

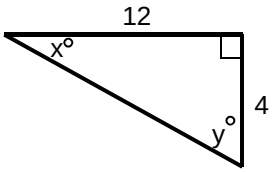
y ≈ _____



5.

x ≈ _____

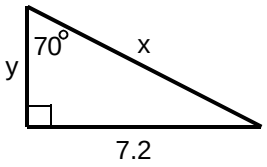
y ≈ _____



6.

x ≈ _____

y ≈ _____

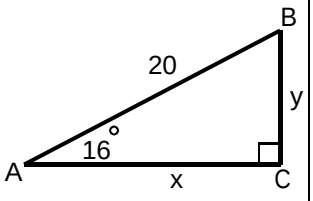


7.

x ≈ _____

y ≈ _____

m∠B=_____

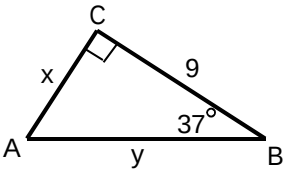


8.

x ≈ _____

y ≈ _____

m∠A=_____



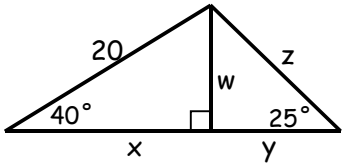
9.

w ≈ _____

x ≈ _____

y ≈ _____

z ≈ _____

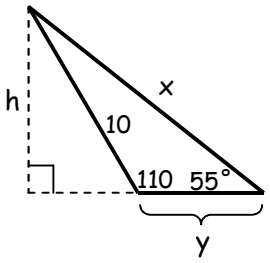


10.

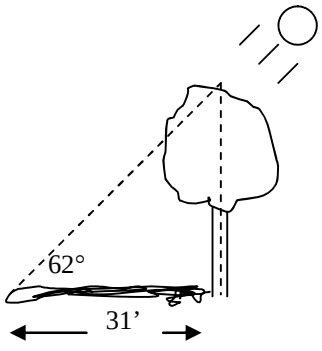
h ≈ _____

x ≈ _____

y ≈ _____



11. How tall is the tree?



12. A man who is 6 feet tall is flying a kite. The kite string is 75 feet long. If the angle that the kite string makes with the line horizontal to the ground is 35°, how far above the ground is the kite?

PART B:

13. A ladder 14 feet long rests against the side of a building. The base of the ladder rests on level ground 2 feet from the side of the building. What angle does the ladder form with the ground?

14. A 24-foot ladder leaning against a building forms an 18° angle with the side of the building. How far is the base of the ladder from the base of the building?

15. A road rises 10 feet for every 400 feet along the pavement (not the horizontal). What is the measurement of the angle the road forms with the horizontal?

16. A 32-foot ladder leaning against a building touches the side of the building 26 feet above the ground. What is the measurement of the angle formed by the ladder and the ground?

17. The directions for the use of a ladder recommend that for maximum safety, the ladder should be placed against a wall at a 75° angle with the ground. If the ladder is 14 feet long, how far from the wall should the base of the ladder be placed?

18. A kite is held by a taut string pegged to the ground. The string is 40 feet long and makes a 33° angle with the ground. Supposing that the ground is level, find the vertical distance from the ground to the kite.

19. A wire anchored to the ground braces a 17-foot pole. The wire is 20 feet long and is attached to the pole 2 feet from the top of the pole. What angle does the wire make with the ground?

20. A jet airplane begins a steady climb of 15° and flies for two ground miles. What was its change in altitude?