

Review Worksheet for Chapter 8

Simplify the following roots.

1) $9\sqrt{49}$

2) $\sqrt{\frac{81}{36}}$

3) $\sqrt{112}$

4) $21\sqrt{92}$

5) $\sqrt{\frac{11}{7}}$

6) $\frac{56}{\sqrt{12}}$

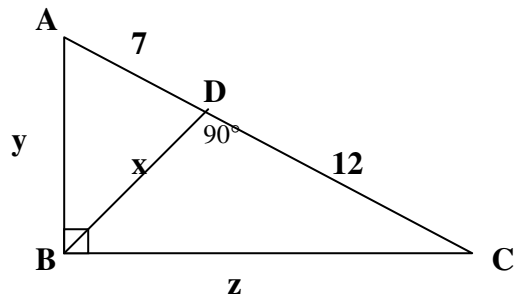
Find the geometric mean between the two numbers (keep your answer in simplified root form).

7) 2 and 8

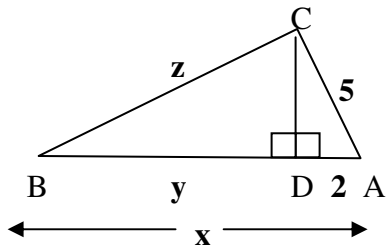
8) 3 and 24

For each diagram, find the values of x , y , and z (your answers can be in decimal form rounded to the nearest hundredth).

9)



10) Given that $\angle C = 90^\circ$



Use the Pythagorean Theorem to complete the table.

	11)	12)	13)
a	6	$\sqrt{5}$	
b	8		24
c		7	25

14) You want to clean the gutters on your house. Your gutters are 30 feet off the ground and you need to keep the ladder 12 feet from your house so it will rest on your sidewalk. Your ladder extends to 35 feet long, will it be long enough for you to be able to clean the gutters?

Tell whether the triangle with the given lengths is acute, right, or obtuse. If a triangle can not be formed, write not possible.

15) 2, 5, 6

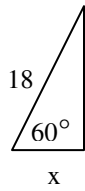
16) 7, 12, 13

17) 2, 7, 9

18) 1, $\sqrt{7}$, $2\sqrt{2}$

Find the value of x .

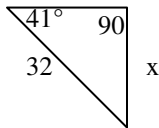
19)



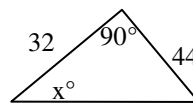
20) Given a square with a perimeter of 16, find the length of the diagonal.

Find the value of x to the nearest hundredth.

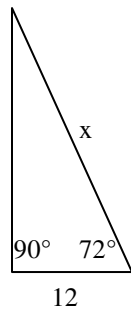
21)



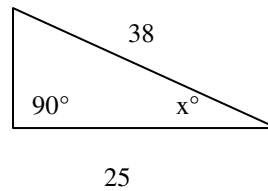
22)



23)



24)



25) A tree casts a shadow 21 m long. The angle of elevation of the sun is 51° . What is the height of the tree? (draw a diagram and round your answer to the nearest hundredth)

26) A helicopter is hovering over a landing pad 100 m from where you are standing. The helicopter's angle of elevation with the ground is 12° . What is the altitude of the helicopter? (draw a diagram and round your answer to the nearest hundredth)

27) A 15 m pole is leaning against a wall. The foot of the pole is 10 m from the wall. Find the angle the pole makes with the ground. (draw a diagram and round your answer to the nearest hundredth)

28) The lighthouse operator is at the top of the lighthouse when she spots a boat. The top of the lighthouse is 25 m above sea level and the angle of depression of the sighting is 10° . How far is the boat from the base of the lighthouse? (draw a diagram and round your answer to the nearest hundredth)

Answer Key:

- 1) 63
- 2) $\frac{3}{2}$
- 3) $4\sqrt{7}$
- 4) $42\sqrt{23}$
- 5) $\frac{\sqrt{77}}{7}$
- 6) $\frac{28\sqrt{3}}{3}$
- 7) 4
- 8) $6\sqrt{2}$
- 9) $x = 9.17, y = 11.53, z = 15.1$
- 10) $x = 12.5, y = 10.5, z = 11.46$
- 11) 10
- 12) $2\sqrt{11}$
- 13) 7
- 14) yes; you need at least 32.31 feet of ladder
- 15) acute
- 16) obtuse
- 17) not a Δ
- 18) right
- 19) 9
- 20) $4\sqrt{2}$
- 21) 20.99
- 22) 53.97°
- 23) 38.83
- 24) 48.86°
- 25) 25.93 m
- 26) 21.26 m
- 27) 48.19°
- 28) 141.78 m