

Section 2 - Right triangle prep

Right triangle word Problems

An airplane is flying at an altitude of 6000 m over the ocean directly toward a coastline. At a certain time, the angle of depression to the coastline from the airplane is 14° . How much farther (to the nearest kilometer) does the airplane have to fly before it is directly above the coastline?

24064 meters or 24 kilometers

From a horizontal distance of 80.0 m, the angle of elevation to the top of a flagpole is 18° . Calculate the height of the flagpole to the nearest tenth of a metre.

26 ish

The angle of elevation of the sun is 68° when a tree casts a shadow 14.3 m long. How tall is the tree, to the nearest tenth of a metre?

35.4

A person flying a kite has released 176 m of string. The string makes an angle of 27° with the ground. How high is the kite? How far away is the kite horizontally? Answer to the nearest metre.

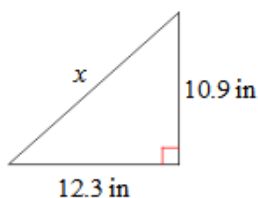
80ish

Mark is creating a zip line. The line starts on the top of a 65 foot cliff and ends at a platform 5 feet off the ground. If the zip line had a 12 degree angle of depression, how far away is the platform?

305.8

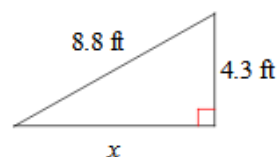
Pythagorean theorem

3)



- A) 19.7 in B) 20.5 in
C) 5.7 in *D) 16.4 in

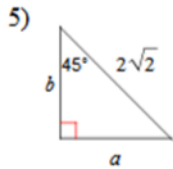
4)



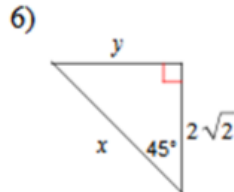
- A) 9.8 ft B) 6.4 ft
*C) 7.7 ft D) 11.7 ft

Special Rights

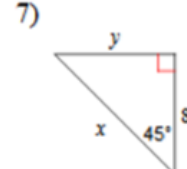
Find the missing side lengths. Leave your answers as radicals in simplest form.



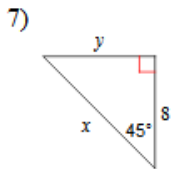
- *A) $a=2, b=2$
- B) $a=1, b=1$
- C) $a=\frac{2\sqrt{3}}{3}, b=\frac{2\sqrt{3}}{3}$
- D) $a=\sqrt{2}, b=\frac{2\sqrt{3}}{3}$



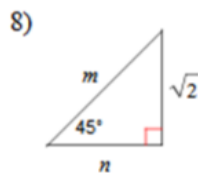
- A) $x=2\sqrt{2}, y=4$
- B) $x=4\sqrt{3}, y=\sqrt{2}$
- C) $x=4, y=\sqrt{2}$
- *D) $x=4, y=2\sqrt{2}$



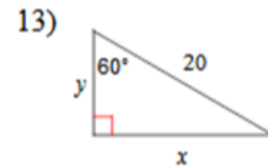
- A) $x=8\sqrt{2}, y=8\sqrt{3}$
- B) $x=8, y=\frac{16\sqrt{6}}{3}$
- *C) $x=8\sqrt{2}, y=8$
- D) $x=8\sqrt{3}, y=8\sqrt{2}$



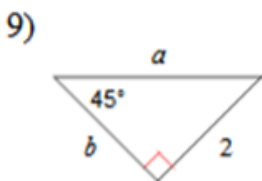
- A) $x=8\sqrt{2}, y=8\sqrt{3}$
- B) $x=8, y=\frac{16\sqrt{6}}{3}$
- *C) $x=8\sqrt{2}, y=8$
- D) $x=8\sqrt{3}, y=8\sqrt{2}$



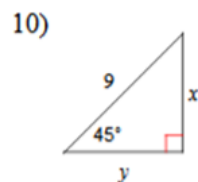
- A) $m=2\sqrt{2}, n=2$
- *B) $m=2, n=\sqrt{2}$
- C) $m=\sqrt{2}, n=2\sqrt{2}$
- D) $m=2, n=2\sqrt{2}$



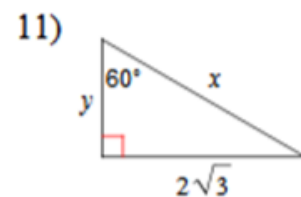
- A) $x=10, y=20$
- *B) $x=10\sqrt{3}, y=10$
- C) $x=10, y=10\sqrt{3}$
- D) $x=20, y=\frac{10\sqrt{3}}{3}$



- A) $a=4\sqrt{2}, b=2$
- B) $a=2\sqrt{2}, b=1$
- C) $a=4\sqrt{2}, b=1$
- *D) $a=2\sqrt{2}, b=2$



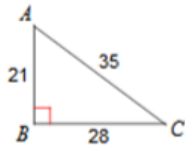
- A) $x=\frac{9\sqrt{6}}{2}, y=\frac{9\sqrt{6}}{2}$
- *B) $x=\frac{9\sqrt{2}}{2}, y=\frac{9\sqrt{2}}{2}$
- C) $x=3\sqrt{6}, y=3\sqrt{6}$
- D) $x=\frac{9\sqrt{2}}{4}, y=\frac{9\sqrt{2}}{4}$



- A) $x=2, y=2$
- B) $x=2, y=\frac{2\sqrt{3}}{3}$
- C) $x=4, y=\frac{2\sqrt{3}}{3}$
- *D) $x=4, y=2$

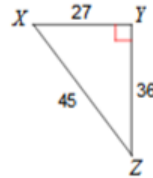
Find the value of each trigonometric ratio.

17) $\sin A$



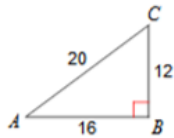
- A) $\frac{3}{5}$ B) $\frac{5}{4}$
 C) $\frac{4}{3}$ *D) $\frac{4}{5}$

18) $\tan Z$



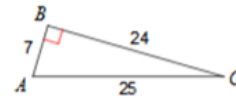
- A) $\frac{5}{3}$ B) $\frac{4}{5}$
 *C) $\frac{3}{4}$ D) $\frac{3}{5}$

19) $\tan C$



- A) $\frac{5}{4}$ *B) $\frac{4}{3}$
 C) $\frac{3}{5}$ D) $\frac{5}{3}$

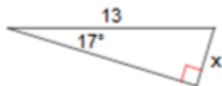
20) $\sin A$



- A) $\frac{7}{25}$ B) $\frac{25}{7}$
 *C) $\frac{24}{25}$ D) $\frac{24}{7}$

Find the missing side. Round to the nearest tenth.

1)



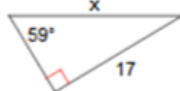
- A) 2.9 B) 4.8
 *C) 3.8 D) 44.5

2)



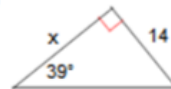
- A) 7.5 B) 28.4
 *C) 19.2 D) 19.5

3)



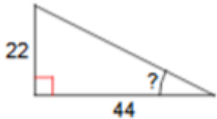
- A) 19.3 *B) 19.8
 C) 24.8 D) 14.6

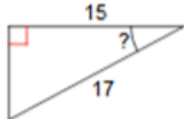
4)

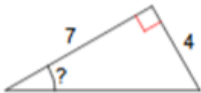


- A) 24.8 B) 15.2
 C) 11.3 *D) 17.3

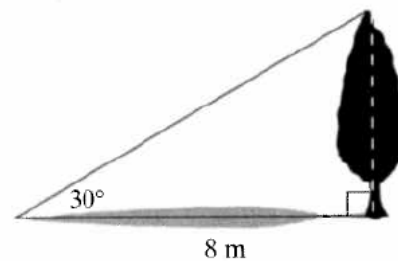
Find the measure of the indicated angle to the nearest degree.

6) 
 A) 49° *B) 27°
 C) 43° D) 60°

7) 
 A) 62° B) 44°
 C) 49° *D) 28°

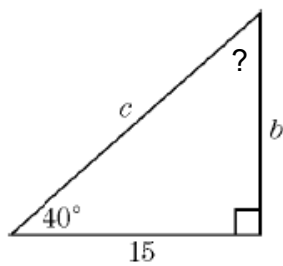
8) 
 A) 35° *B) 30°
 C) 60° D) 55°

If a tree casts an 8-meter shadow, and the angle from the ground to the tree is 30° , what is the approximate height of the tree?



- A 4.6 m C 13.7 m
- B 6.3 m D 16 m

Find the missing angle.



- A. 50
- B. 40
- C. 36
- D. 30

In $\triangle XYZ$, what is the value of $\tan Z$?

- a) $\frac{5}{13}$ b) $\frac{5}{12}$ c) $\frac{12}{13}$
- d) $\frac{12}{5}$ e) $\frac{13}{5}$

