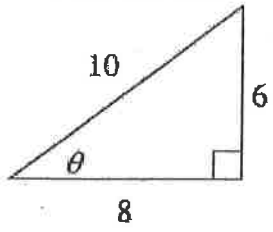
Answer Key

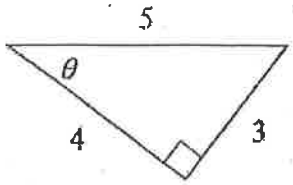
Trig Math 10 100% Quiz Name Patrick

1. Find the tan ratio:



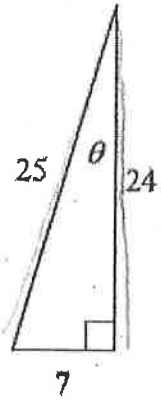
$\tan\theta = \frac{3}{4}$

Find the sin ratio:



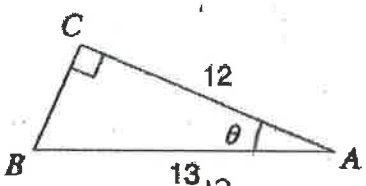
$\sin\theta = \frac{3}{5}$

Find the cos ratio:



$\cos\theta = \frac{24}{25}$

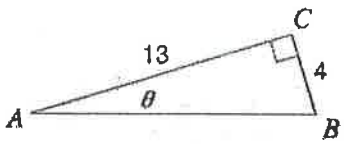
2. Find the missing angle:



$\cos\theta = \frac{12}{13} = 0.923$

$\theta = 22.62°$

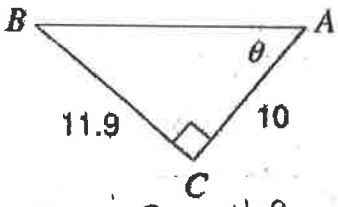
Find the missing angle:



$\tan\theta = \frac{4}{13}$

$\theta = 17.1°$

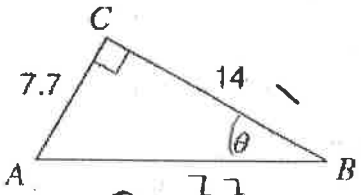
Find the missing angle:



$\tan\theta = \frac{11.9}{10}$

$\theta = 49.95°$

3. Find the missing angle:

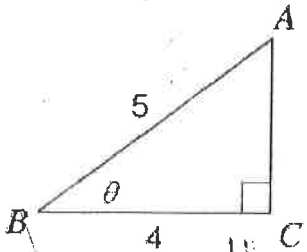


$\tan\theta = \frac{7.7}{14}$

$\tan^{-1}(7.7 \div 14) = \theta$

$\theta = 28.81°$

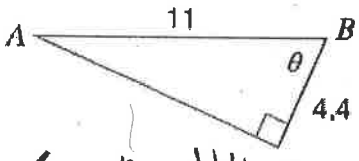
Find the missing angle:



$\cos\theta = \frac{4}{5}$

$\theta = 36.87°$

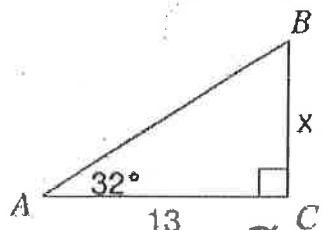
Find the missing angle:



$\cos\theta = \frac{4.4}{11}$

$\theta = 66.42°$

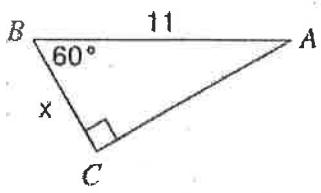
4. Find the missing side:



$\tan 32 = \frac{x}{13} = 0.62$

$x = 8.12$

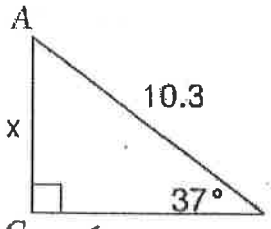
Find the missing side:



$\cos 60 = 0.5 = \frac{x}{11}$

$x = 5.5$

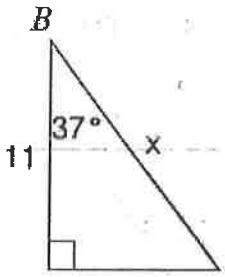
Find the missing side:



$\sin 37 = .601 = \frac{x}{10.3}$

$x = 6.19$

5. Find the missing side:

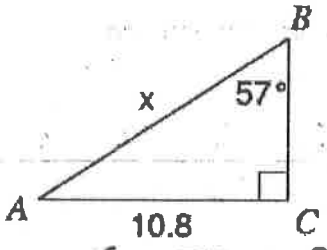


$\cos 37 = .799 = \frac{11}{x}$

$\frac{.799x}{.799} = \frac{11}{.799}$

$x = 13.77$

Find the missing side:



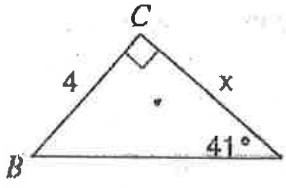
$\sin 57 = 0.838$

$0.838 = \frac{10.8}{x}$

$\frac{0.838x}{0.838} = \frac{10.8}{0.838}$

$x = 12.89$

Find the missing side:

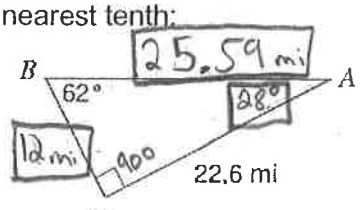


$\tan 41 = 0.869 = \frac{4}{x}$

$\frac{0.869x}{0.869} = \frac{4}{0.869}$

$x = 4.6$

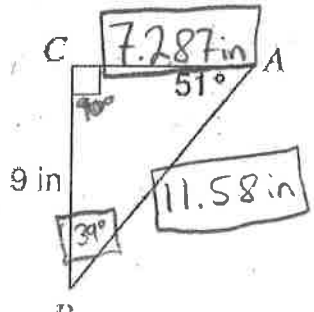
6. Solve the triangle to nearest tenth:



$\frac{22.6}{0.883} = \frac{0.883x}{0.883}$

$\sin\theta =$

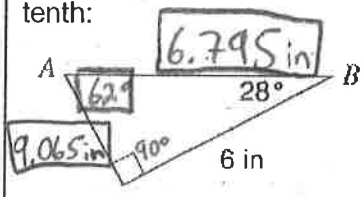
Solve the triangle to nearest tenth:



$\tan 51 = \frac{9}{1.235} = \frac{1.235x}{1.235}$

$x = 7.287$

Solve the triangle to nearest tenth:



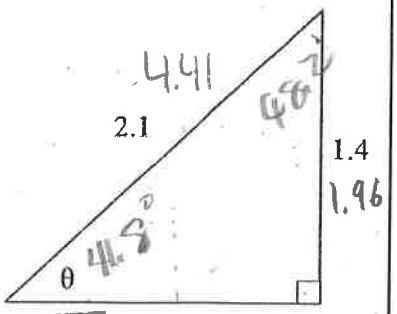
$\cos 28 = \frac{6}{x} = 0.883$

$\frac{6}{0.883} = \frac{0.883x}{0.883}$

$6.795 = x$

$6.795^2 + 36 = y$

7. Solve the triangle, to the nearest tenth



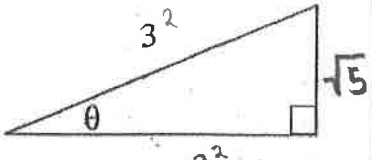
$\sqrt{2.54}$ 34.5 41

-1.96

2.45

$\sqrt{2.54} = 1.6$

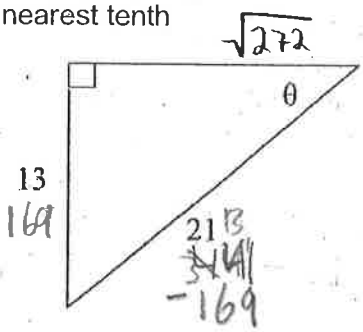
Solve the triangle, to the nearest tenth



$9 - 4 = 5$

$\sqrt{5} = 2.2$

Solve the triangle, to the nearest tenth



21^2

-169

272

$\sqrt{272} = 16.5$

8. You are 200 yards from a river. Rather than walking directly to the river, you walk 400 yards along a straight path to the river's edge. Find the acute angle between path and the river's edge.

$\sin\theta = \frac{1}{2}$

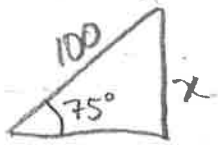
$\theta = 30°$

A 12 meter flagpole casts a 9 meter shadow. Find the angle of elevation of the sun.

$\tan\theta = \frac{12}{9} = \frac{4}{3}$

$\theta = 53.13°$

Suppose you're flying a kite, and it gets caught at the top of the tree. You've let out all 100 feet of string for the kite, and the angle that the string makes with the ground is 75 degrees. Instead of worrying about how to get your kite back, you wonder. "How tall is that tree?"

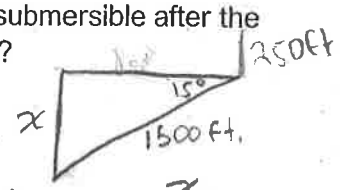


$\sin 75 = 0.966$

$0.966 = \frac{x}{100}$

$x = 96.6$ ft

9. A submersible traveling at a depth of 250 feet dives at an angle of 15° with respect to a line parallel to the water's surface. It travels a horizontal distance of 1500 feet during the dive. What is the depth of the submersible after the dive?



$\sin 15 = \frac{x}{1500} = 0.259$

$0.259 \times 1500 = x$

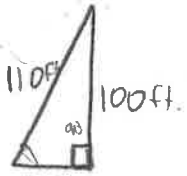
$388.2 = x$

$+ 250.0$

Depth = 638.2 ft.

Right answer = 652 ft

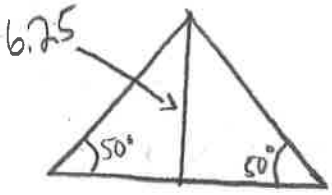
A fire department's longest ladder is 110 feet long, and the safety regulation states that they can use it for rescues up to 100 feet off the ground. What is the maximum safe angle of elevation for the rescue ladder?



$\sin\theta = \frac{100}{110}$

$\theta = 65.38°$

Brothers Bob and Tom Katz buy a tent that has a center pole 6.25 feet high. If the sides of the tent are supposed to make a 50° angle with the ground, how wide is the tent?



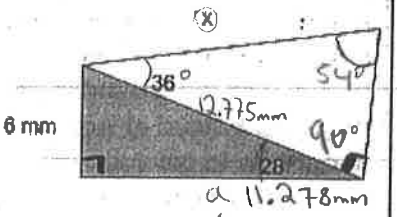
$\tan 50 = \frac{6.25}{x} = 1.192$

$\frac{6.25}{1.192} = x$

$x = 5.24$

$2x = 10.48$ ft

10. Find x



$\tan 28 = \frac{6}{a} = 0.532$

$\frac{6}{0.532} = \frac{0.532a}{0.532}$

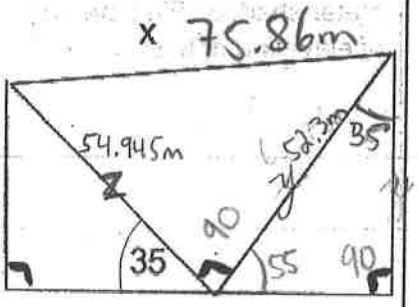
$a = 11.278^2 = 127.1932$

$\cos 36 = \frac{12.775}{x} = 0.809$

$\frac{12.775}{0.809} = \frac{0.809x}{0.809}$

$x = 15.79$ mm

Find x



45 m 30 m

$\cos 55 = \frac{30}{y} = 0.5736$

$y = 52.3$ m

$\cos 35 = \frac{45}{z} = 0.819$

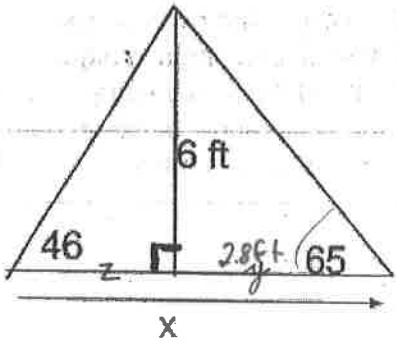
$z = 54.945$ m

$a^2 + b^2 = c^2$

$= 5754.24$

$x = 75.86$ m

Find x



$\tan 65 = \frac{6}{y} = 2.144$

$y = 2.8$ ft

$\tan 46 = \frac{6}{z} = 1.035$

$z = 5.797$

$z + y = x = 8.597$ ft