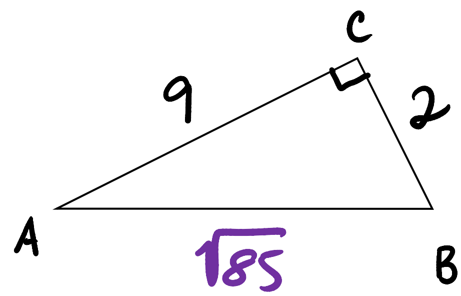
Honors Geometry 9.9 & 9.10 Trig Review

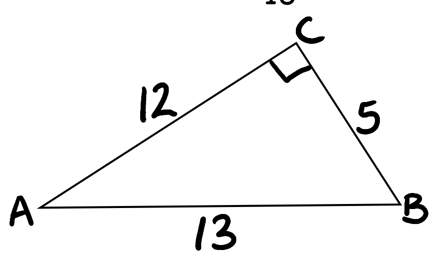
Remember, SOHCAHTOA! When you are finding a side length, use sin, cos, & tan. When you are finding an angle measure, use $\sin^{-1}$, $\cos^{-1}$, $\tan^{-1}$.



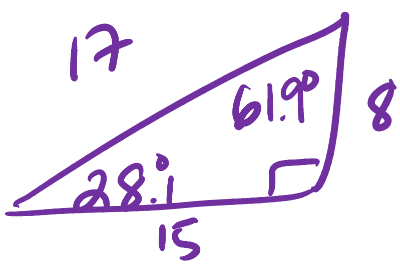
1. Find each ratio:
   a. $\sin\angle A$ $2\sqrt{85}/85$
   b. $\cos\angle A$ $9\sqrt{85}/85$
   c. $\tan\angle A$ $2/9$
   d. $\sin\angle B$ $9\sqrt{85}/85$
   e. $\cos\angle B$ $2\sqrt{85}/85$
   f. $\tan\angle B$ $9/2$

2. Using the figure as marked, fill in the blanks with the missing angle.

   a. $\frac{5}{12} = \tan\angle$ A
   b. $\frac{5}{13} = \cos\angle$ B
   c. $\frac{5}{13} = \sin\angle$ A



3. Find the measures of the angles of an 8, 15, 17 triangle to the nearest tenth.



4. Draw triangles to answer these and you may not use your calculator!
   a. If $\tan\angle A = 1$, find $m\angle A$.

   45°

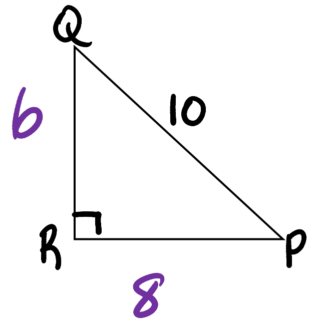
   b. If $\sin\angle P = 0.5$, find $m\angle P$.

   30°

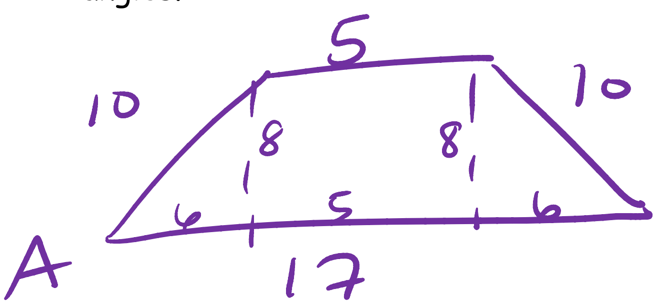
5. Given: $\sin\angle P = \frac{3}{5}$, $PQ = 10$

Find: $\cos\angle P$

$\frac{4}{5}$

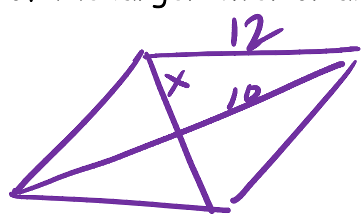


6. Given an isosceles trapezoid with sides 5, 10, 17, and 10, find the sine of one of the acute angles.



$\sin A = \frac{4}{5}$

7. Given a rhombus with sides of 12 and the longer diagonal of length 20, find the measure of one of the larger interior angles to the nearest tenth.



$\sin x = \frac{10}{12}$

$x = 56.4°$

$112.9°$

8. Solve each equation for x to the nearest tenth.

a. $\sin 25° = \frac{x}{40}$

16.9

b. $\cos 73° = \frac{35}{x}$

119.7

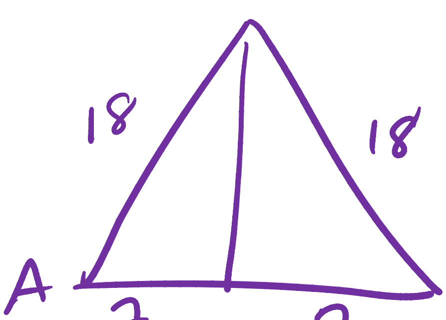
c. $\sin x° = \frac{29}{30}$

75.2°

9. The legs of an isosceles triangle are each 18. The base is 14.

a. Find the base angles to the nearest degree. 67°

b. Find the exact length of the altitude to the base.



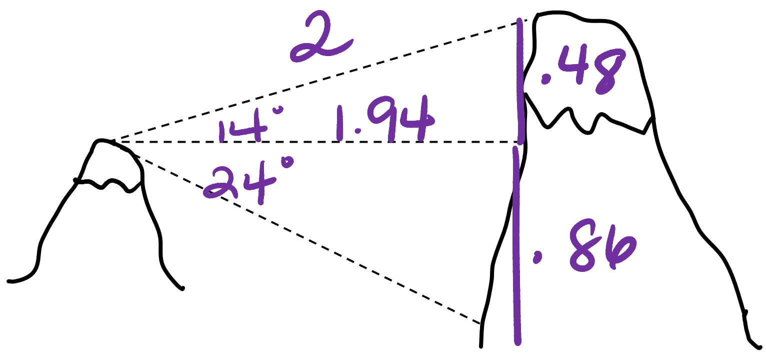
$\cos A = \frac{7}{18}$

altitude $= \sqrt{275}$

$= 5\sqrt{11}$

10. While at the top of a small mountain, you stare out at a larger mountain in the distance. You know the distance between the mountain tops is 2 miles. If you measure the angle of depression to the base of the larger mountain to be 24 degrees and the angle of elevation to the top of the mountain to be 14 degrees, how tall is the larger mountain?

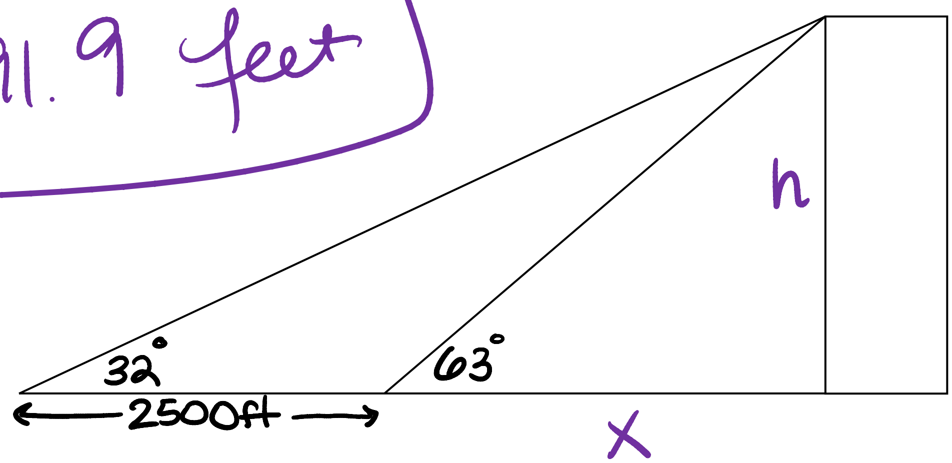
$5\sqrt{11}$



1.35 mi tall

11. To determine the height of a tall building from a distance, you use a sextant to measure the angle when looking up at the top of the building to be 32 degrees. You move 2500 feet closer to the building and look up again. This time you measure the angle to the top of the building to be 63 degrees. How tall is the building?

$\boxed{2291.9 \text{ feet}}$



A

$\tan 32° = \frac{h}{2500+x}$

B

$\tan 63° = \frac{h}{x}$

$2500A + Ax = h$

$Bx + h$

$2500A + Ax = Bx$

$2500A = Bx - Ax$

$x = \frac{2500A}{B-A} = 1167.8$