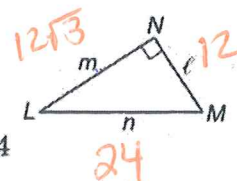


7-4 Practice (Average)

Trigonometry

Use $\triangle LMN$ to find $\sin L$, $\cos L$, $\tan L$, $\sin M$, $\cos M$, and $\tan M$. Express each ratio as a fraction and as a decimal to the nearest hundredth.



1. $l = 15, m = 36, n = 39$

$\sin L = \frac{15}{39} \approx 0.38;$

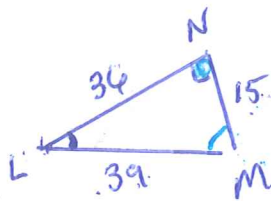
$\cos L = \frac{36}{39} \approx 0.92;$

$\tan L = \frac{15}{36} \approx 0.42;$

$\sin M = \frac{36}{39} \approx 0.92;$

$\cos M = \frac{15}{39} \approx 0.38;$

$\tan M = \frac{36}{15} = 2.4$



2. $l = 12, m = 12\sqrt{3}, n = 24$

$\sin L = \frac{12}{24} = 0.50;$

$\cos L = \frac{12\sqrt{3}}{24} \approx 0.87;$

$\tan L = \frac{12}{12\sqrt{3}} \approx 0.58;$

$\sin M = \frac{12\sqrt{3}}{24} \approx 0.87;$

$\cos M = \frac{12}{24} = 0.50;$

$\tan M = \frac{12\sqrt{3}}{12} \approx 1.73$

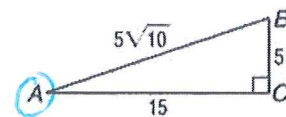
Use a calculator to find each value. Round to the nearest ten-thousandth.

3. $\sin 92.4 \approx 0.9991$

4. $\tan 27.5 \approx 0.5206$

5. $\cos 64.8 \approx 0.4258$

Use the figure to find each trigonometric ratio. Express answers as a fraction and as a decimal rounded to the nearest ten-thousandth.



6. $\cos A = \frac{15}{5\sqrt{10}}$

7. $\tan B = \frac{3}{1} = 3.0000$

8. $\sin A = \frac{\sqrt{10}}{10} \approx 0.3162$

$\frac{3\sqrt{10}}{10} \approx 0.9487$

$\frac{3}{1} = 3.0000$

$\frac{\sqrt{10}}{10} \approx 0.3162$

$\frac{5}{5\sqrt{10}} = \frac{1}{\sqrt{10}} = \frac{\sqrt{10}}{10}$

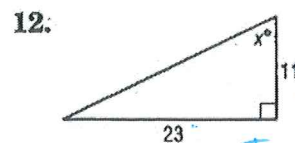
Find the measure of each acute angle to the nearest tenth of a degree.

9. $\sin B = 0.7823 \Rightarrow B \approx 51.5^\circ$

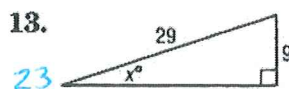
10. $\tan A = 0.2356 \Rightarrow A \approx 13.3^\circ$

11. $\cos R = 0.6401 \Rightarrow R \approx 50.2^\circ$

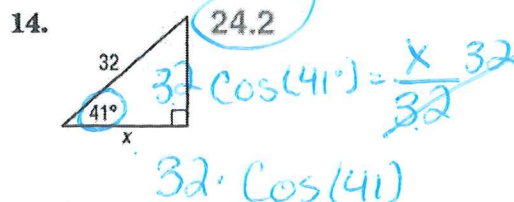
Find x . Round to the nearest tenth.



$\tan x = \frac{11}{23}$
 $\tan^{-1}(\frac{11}{23}) = \tan^{-1}(0.4783)$
 $x \approx 23.6^\circ$



18.1



15. **GEOGRAPHY** Diego used a theodolite to map a region of land for his class in geomorphology. To determine the elevation of a vertical rock formation, he measured the distance from the base of the formation to his position and the angle between the ground and the line of sight to the top of the formation. The distance was 43 meters and the angle was 36 degrees. What is the height of the formation to the nearest meter? 31 m

