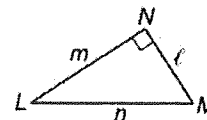# 7-4 **Practice** (Average)

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. $\ell = 15$, $m = 36$, $n = 39$

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

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

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

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

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

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

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

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

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

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

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

$\cos M = \dfrac{12}{24} = 0.50$;
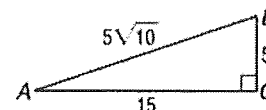
$\tan M = \dfrac{12\sqrt{3}}{12} \approx 1.73$

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

3. $\sin 92.4$ 0.9991

4. $\tan 27.5$ 0.5206

5. $\cos 64.8$ 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. $\cos A$

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

7. $\tan B$

$\dfrac{3}{1} = 3.0000$
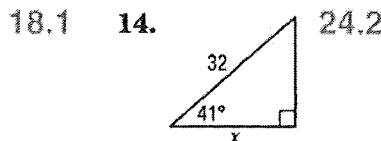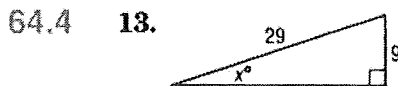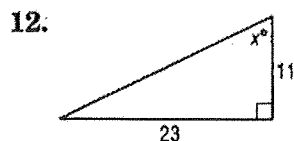
8. $\sin A$

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

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

9. $\sin B = 0.7823$ 51.5

10. $\tan A = 0.2356$ 13.3

11. $\cos R = 0.6401$ 50.2

Find x. Round to the nearest tenth.

12. 64.4

13. 18.1

14. 24.2

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