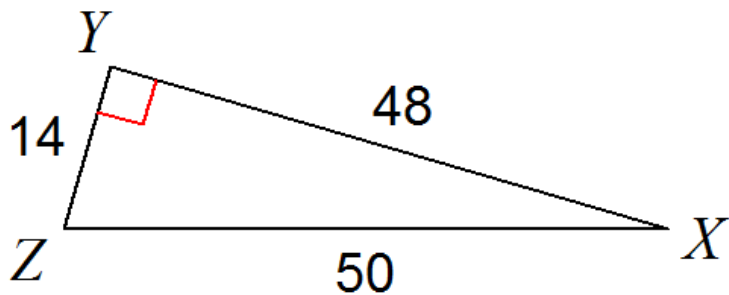


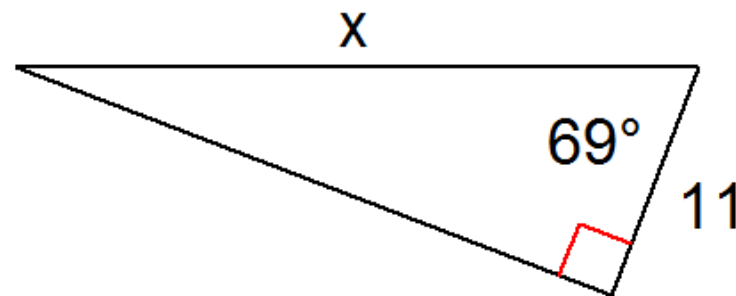
8-2 Trigonometric Ratios

Warm-Up

1. Find $\tan X$



2. Solve for x .

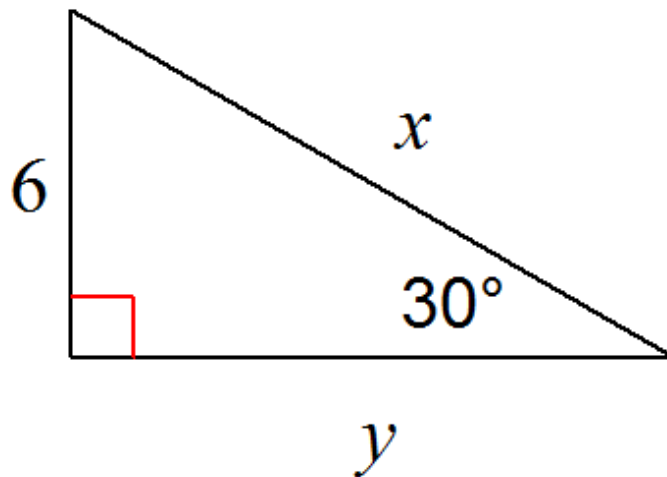


8-2 Trigonometric Ratios

Use a special right triangle to find $\tan 60^\circ$.

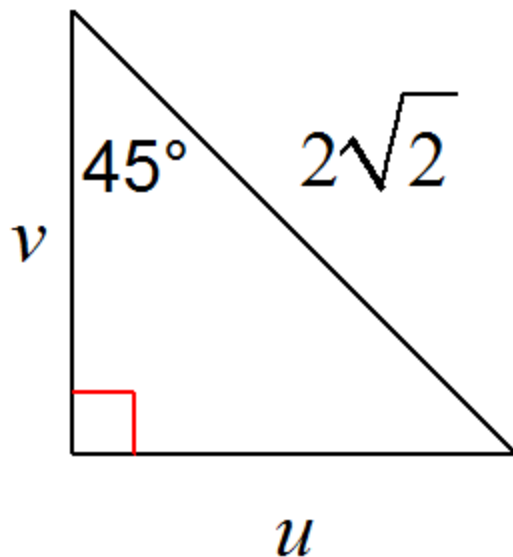
8-2 Trigonometric Ratios

Find the exact area of the triangle.



8-2 Trigonometric Ratios

Find the exact area of the triangle.



8-2 Trigonometric Ratios

Problem Solving Application

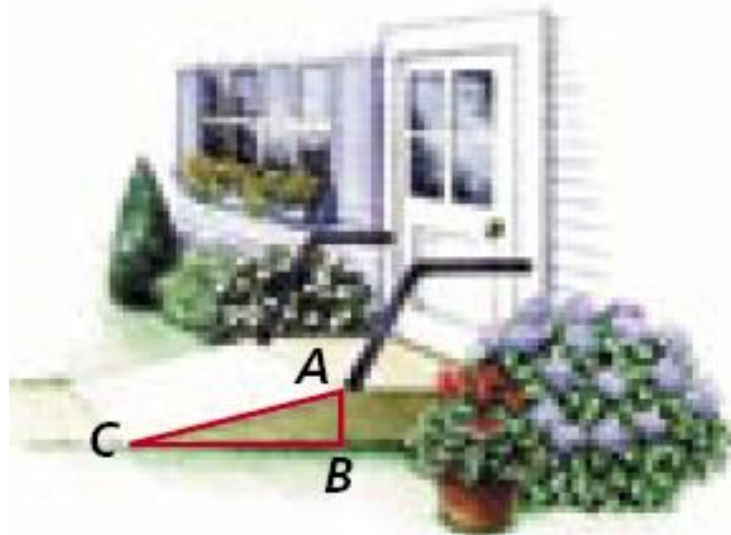
A contractor is building a wheelchair ramp for a doorway that is 1.2 ft above the ground. To meet ADA guidelines, the ramp will make an angle of 4.8° with the ground. To the nearest hundredth of a foot, what is the horizontal distance covered by the ramp?

8-2 Trigonometric Ratios

Check It Out! Example 5



Find AC , the length of the ramp, to the nearest hundredth of a foot.

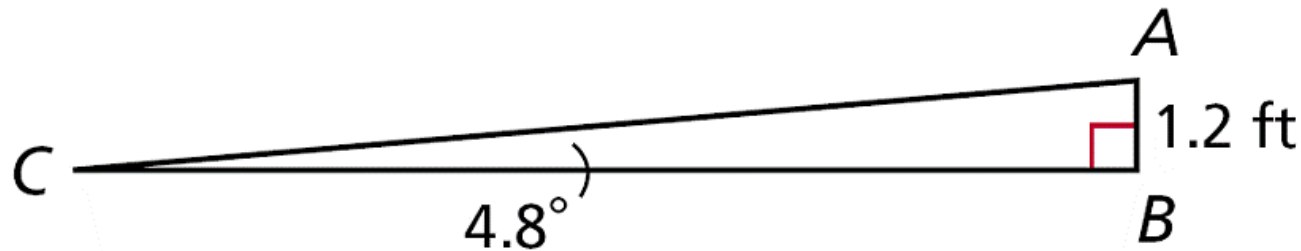


8-2 Trigonometric Ratios

Check It Out! Example 5 Continued

1 Understand the Problem

Make a sketch. The **answer** is AC .



8-2 Trigonometric Ratios

Check It Out! Example 5 Continued



Make a Plan

\overline{AC} is the hypotenuse to $\angle C$. You are given AB , which is the leg opposite $\angle C$. Since the opposite leg and hypotenuse are involved, write an equation using the sine ratio.

8-2 Trigonometric Ratios

Check It Out! Example 5 Continued



Solve

$$\sin C = \frac{\text{opp. leg}}{\text{hyp.}} = \frac{AB}{AC}$$

$$\sin 4.8^\circ = \frac{1.2}{AC}$$

$$AC = \frac{1.2}{\sin 4.8^\circ}$$

$$AC \approx 14.3407 \text{ ft}$$

Write a trigonometric ratio.

Substitute the given values.

Multiply both sides by AC and divide by $\sin 4.8^\circ$.

Simplify the expression.

8-2 Trigonometric Ratios

Check It Out! Example 5 Continued



4 Look Back

The problem asks for AC rounded to the nearest hundredth, so round the length to 14.34. The length of ramp covers a distance of 14.34 ft.

8-2 Trigonometric Ratios

Lesson Quiz: Part I

Use a special right triangle to write each trigonometric ratio as a fraction.

1. $\sin 60^\circ = \frac{\sqrt{3}}{2}$

2. $\cos 45^\circ = \frac{\sqrt{2}}{2}$

Use your calculator to find each trigonometric ratio. Round to the nearest hundredth.

3. $\tan 84^\circ \approx 9.51$

4. $\cos 13^\circ \approx 0.97$

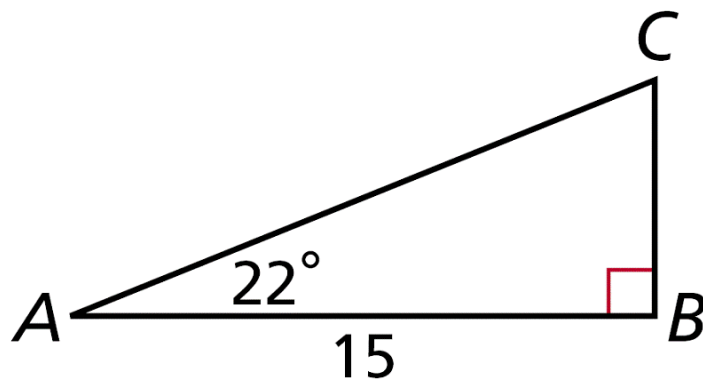
8-2 Trigonometric Ratios

Lesson Quiz: Part II

Find each length. Round to the nearest tenth.

5. CB 6.1

6. AC 16.2



Use your answers from Items 5 and 6 to write each trigonometric ratio as a fraction and as a decimal rounded to the nearest hundredth.

7. $\sin A = \frac{6.1}{16.2} \approx 0.38$ 8. $\cos A = \frac{15}{16.2} \approx 0.93$ 9. $\tan A = \frac{6.1}{15} \approx 0.41$

8-2 Trigonometric Ratios

Classwork/Homework

WS 8.2C – Word Problems