8.2 Day 1 Homework

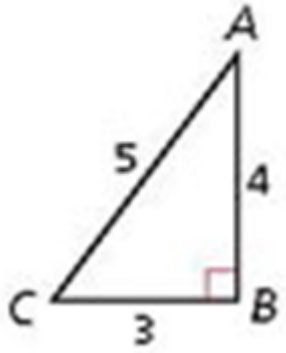
Page 545 #3-17 Odd, 18-21, 43, 48-49

Write each trigonometric ratio as a fraction and as a decimal rounded to the nearest hundredth.

3. $\sin C$ $\frac{O}{H}$ $\frac{4}{5} = .80$

5. $\cos A$ $\frac{A}{H}$ $\frac{4}{5} = .80$

7. $\tan C$ $\frac{O}{A}$ $\frac{4}{3} \approx 1.33$



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

9. $\cos 60°$

A x 60 2x H 30 x√3

$\frac{x}{2x} = \frac{1}{2}$

11. $\sin 45°$

O x 45 x√2 45 x

$\frac{x}{x\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

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

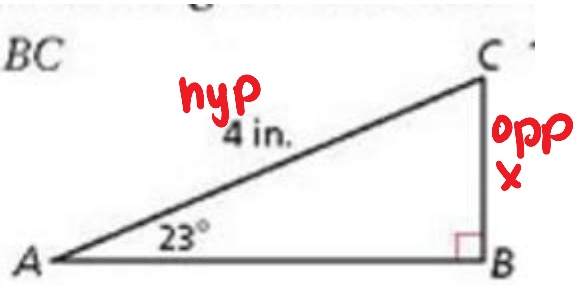
13. $\sin 23°$ $\approx .39$

15. $\cos 88°$ $\approx .03$

17. $\tan 9°$ $\approx .16$

Find each length. Round to the nearest hundredth.

18. BC

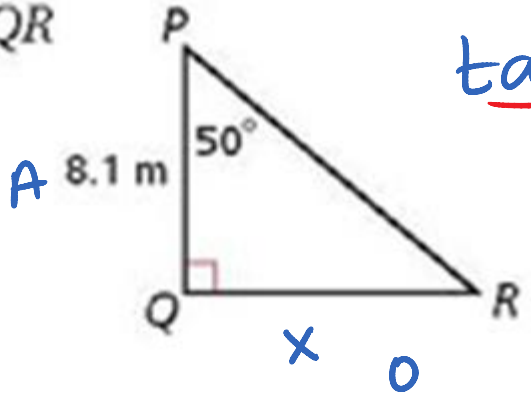


$S\frac{O}{H}$ $4\sin(23) = \frac{x}{4} \cdot 4$

$4 \cdot \sin(23) = x$

$CB \approx 1.56$ in

19. QR

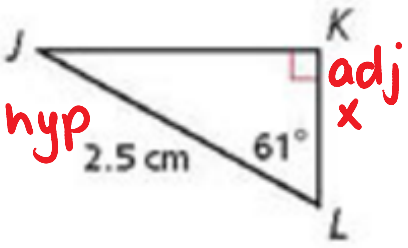


$\frac{\tan(50)}{1} = \frac{x}{8.1}$

$8.1 \tan(50) = x$

$QR \approx 9.65$ m

20. KL

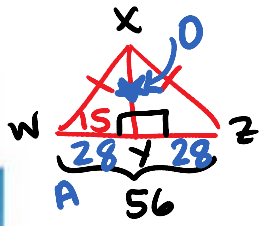


$C\frac{A}{H}\ 2.5\cos(61) = \frac{x}{2.5}$ ·2.5

$x \approx 2.5\cos(61)$

$KL \approx 1.21$ cm

21. Architecture A pediment has a pitch of 15°, as shown. If the width of the pediment, WZ, is 56 ft, what is XY to the nearest inch?



$\frac{\tan 15}{1} = \frac{*}{28}$

$28 \cdot \tan(15) = *$

$XY \approx 7$ ft 6 in.

43. Sports A jump ramp for waterskiing makes an angle of 15° with the surface of the water. The ramp rises 1.58 m above the surface. What is the length of the ramp to the nearest hundredth of a meter?

opp

$S\frac{O}{H}\ x \cdot \sin(15) = \frac{1.58}{x} \cdot x$

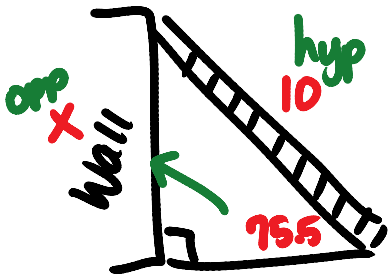
$x \cdot \sin(15) = 1.58$

$x \approx 6.10$ meters

not

~~Sin(15)~~ Sin(15) The ramp is app 6.10 meters long.

48. Safety According to the Occupational Safety and Health Administration (OSHA), a ladder that is placed against a wall should make a 75.5° angle with the ground for optimal safety. To the nearest tenth of a foot, what is the maximum height that a 10-ft ladder can safely reach?



$S\frac{O}{H}$ $10 \cdot \sin(75.5) = \frac{x}{10} \cdot 10$

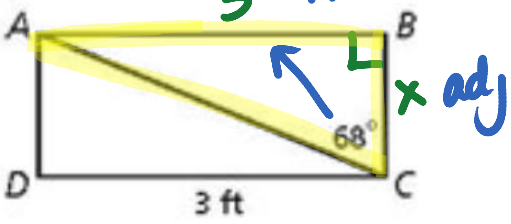
$10 \sin(75.5) = x$

$9.7 \approx x$

A 10ft ladder can safely reach 9.7 ft

Find the indicated length in each rectangle. Round to the nearest tenth.

49. *BC*



3 opp

x adj

$T\frac{O}{A}$ $x \cdot \tan 68 = \frac{3}{x} \cdot x$

$x \cdot \frac{\tan 68}{\tan 68} = \frac{3}{\tan 68}$

$x \approx 1.2$ so BC ≈ 1.2