7.4 Practice Solutions

Directions: Find the value of each trigonometric ratio.

1)
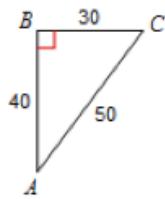
Cos A = $\frac{40}{50}$ = $\boxed{\frac{4}{5}}$

Tan A= $\frac{30}{40}$ = $\boxed{\frac{3}{4}}$

Sin A= $\frac{30}{50}$ = $\boxed{\frac{3}{5}}$

2)

Cos A = $\frac{16}{20}$ = $\boxed{\frac{4}{5}}$

Tan A= $\frac{12}{16}$ = $\boxed{\frac{3}{4}}$

Sin A= $\frac{12}{20}$ = $\boxed{\frac{3}{5}}$

3)

Cos X = $\frac{16}{34}$ = $\boxed{\frac{8}{17}}$

Tan X= $\frac{30}{16}$ = $\boxed{\frac{15}{8}}$

Sin X= $\frac{30}{34}$ = $\boxed{\frac{15}{17}}$

4)

Cos Z = $\boxed{\frac{40}{41}}$

Tan Z= $\boxed{\frac{9}{40}}$
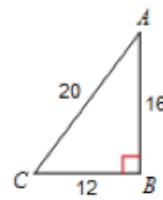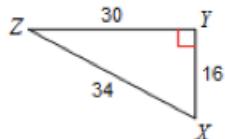
Sin Z= $\boxed{\frac{9}{41}}$
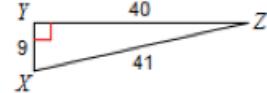
Directions: Find the missing side. Round to the nearest tenth.
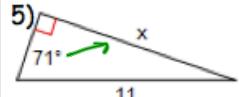
5)

$(11)\sin 71 = \frac{x}{11} (11)$

$\boxed{10.4 = x}$

6)

$(14)\sin 36 = \frac{x}{14} (14)$

$\boxed{8.2 = x}$

7)

$(x)\cos 50 = \frac{15}{x} (x)$

$\frac{x\cos 50}{\cos 50} = \frac{15}{\cos 50}$

$\boxed{x = 23.3}$

8)

$(13)\sin 24 = \frac{x}{13} (13)$

$\boxed{5.3 = x}$

9)

$\tan 58 = \frac{11}{x}$

$x = \frac{11}{\tan 58}$

$\boxed{x = 6.9}$

10)

$(13)\sin 22 = \frac{x}{13} (13)$

$13(\sin 22) = x$

$\boxed{4.9 = x}$

11)

$\cos 48 = \frac{15}{x}$

$x = \frac{15}{\cos 48}$

$\boxed{x = 22.4}$

12)

$(18)\tan 15 = \frac{x}{18} (18)$

$\boxed{4.8 = x}$

13)
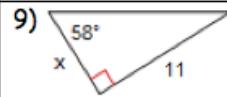
$\cos 62 = \frac{16}{x}$

$x = \frac{16}{\cos 62}$

$\boxed{x = 34.1}$

Directions: For each situation draw a picture and then solve. Round to the nearest tenth if necessary.

14) A flagpole casts a shadow that is 137 feet long. The angle of elevation between from the end of the shadow to the top of the flagpole is 25°. How tall is the flagpole?

$\tan 25 = \dfrac{x}{137}$

$137 \cdot \tan 25 = x$

$x = 63.9 \text{ feet}$

15) An archer shoots an arrow with an angle of elevation of 42° at a target that is 50 feet off the ground. How far did the arrow travel in the air?
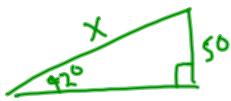
$\sin 42 = \dfrac{50}{x}$

$\dfrac{50}{\sin 42} = x$

$x = 74.7 \text{ feet}$

16) An escalator has a vertical rise of 196 feet and rises at an angle of 10.4°. How long is the escalator?
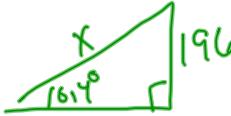
$\sin 10.4 = \dfrac{196}{x}$

$x = \dfrac{196}{\sin 10.4}$

$x = 1085.8 \text{ ft}$