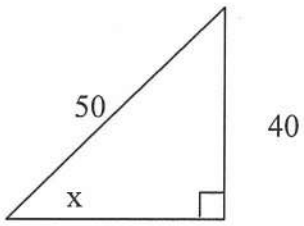
Answers

Practice for Trig Quiz 1 **Name:**

For each right triangle below, find $\cos x$, $\sin x$, and $\tan x$

1)

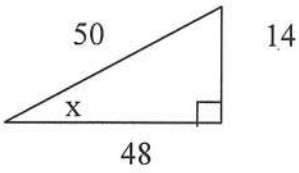


$\cos x = \frac{30}{50} = \frac{3}{5}$ 30

$\sin x = \frac{40}{50} = \frac{4}{5}$

$\tan x = \frac{40}{30} = \frac{4}{3}$

2)

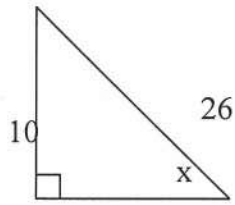


$\cos x = \frac{48}{50} = \frac{24}{25}$

$\sin x = \frac{14}{50} = \frac{7}{25}$

$\tan x = \frac{14}{48} = \frac{7}{24}$

3)

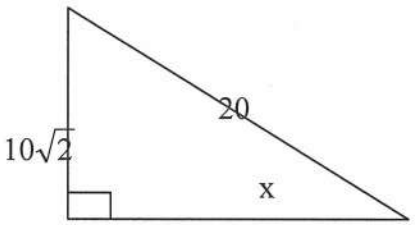


$\cos x = \frac{24}{26} = \frac{12}{13}$

$\sin x = \frac{10}{26} = \frac{5}{13}$

$\tan x = \frac{10}{24} = \frac{5}{12}$

4)



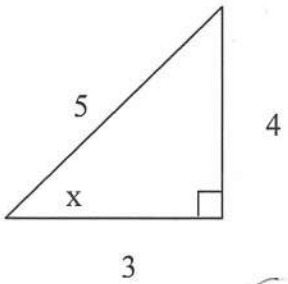
$\cos x = \frac{10\sqrt{2}}{20} = \frac{\sqrt{2}}{2}$

$\sin x = \frac{10\sqrt{2}}{20} = \frac{\sqrt{2}}{2}$

$\tan x = \frac{10\sqrt{2}}{10\sqrt{2}} = 1$

Find the missing side or angle. Round all sides to the nearest tenth and round each angle to the nearest degree.

5) Find angle x.



You can use any trig function since you have all 3 sides

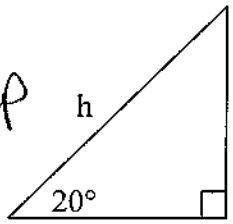
$\cos x = \frac{3}{5}$

2nd cos (3/5) = 53.1301

53°

Find the missing side or angle. Round all sides to the nearest tenth and round each angle to the nearest degree.

6)



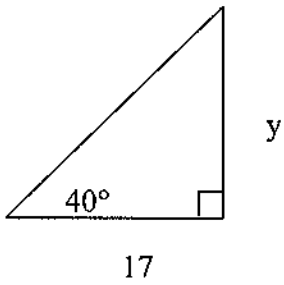
$\frac{\sin 20^\circ}{1} = \frac{8}{h}$

$h \sin 20^\circ = 8$

$h = \frac{8}{\sin 20^\circ} = 23.39$

23.4

7)



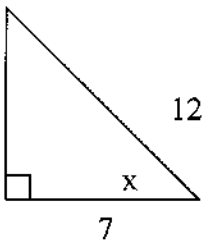
$\frac{\tan 40^\circ}{1} = \frac{y}{17}$

$y = 17 \cdot \tan 40^\circ$

$y = 14.264\ldots$

14.3

8)

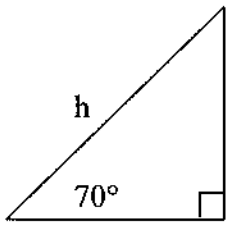


$\cos x = \frac{7}{12}$

2nd cos (7/12) = 54.314...

54°

9)



$\frac{\cos 70^\circ}{1} = \frac{200}{h}$

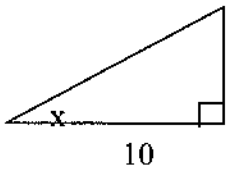
$h \cos 70^\circ = 200$

$h = \frac{200}{\cos 70^\circ}$

$h = 584.7608$

584.8

10)

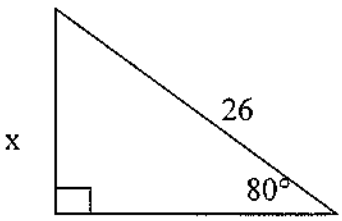


$\tan x = \frac{14}{10}$

2nd tan (14/10) = 54.4623

54°

11)



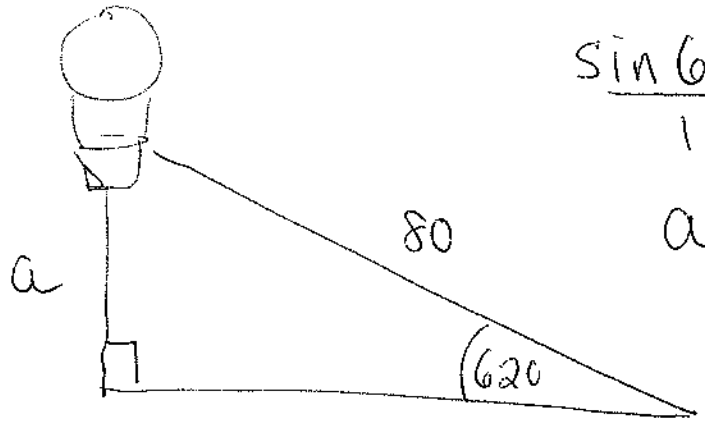
$\frac{\sin 80^\circ}{1} = \frac{x}{26}$

$x = 26 \cdot \sin 80^\circ$

$x = 25.6050$

25.6

10) A hot air balloon is tethered to the ground by an 80-foot rope. If the angle of elevation of the balloon from the point on the ground where the tether rope is attached is 62°, find the altitude of the balloon to the nearest foot.



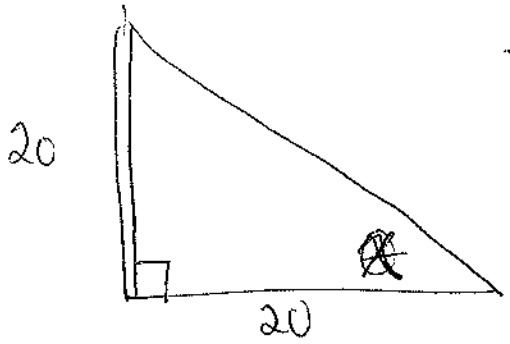
$$\frac{\sin 62^\circ}{1} = \frac{a}{80}$$

$$a = 80 \cdot \sin 62^\circ$$

$$a = 70.6358\ldots$$

$$\boxed{a = 71 \text{ ft}}$$

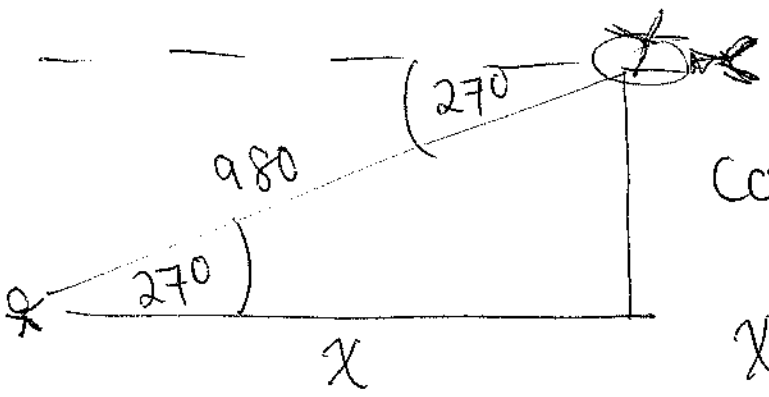
11) A 20-foot pole casts a 20-foot shadow in the sunlight. What is the angle of elevation of the sun?



$$\tan x = \frac{20}{20} = 1$$

$$\tan^{-1}(1) = \boxed{45^\circ}$$

12) A police helicopter with its search beam directed toward a missing child on the ground observes that the angle of depression of the child from the helicopter is 27°. If the length of the beam of light is 980 feet, find to the nearest foot the horizontal distance from the helicopter to the child.



$$\frac{\cos 27^\circ}{1} = \frac{x}{980}$$

$$x = 980 \cdot \cos 27^\circ$$

$$x = 873.18639\ldots$$

$$\boxed{x = 873 \text{ ft}}$$