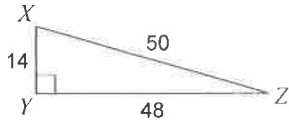


Review - Chapter 10

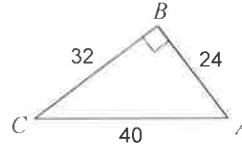
Find the value of each trigonometric ratio. Reduce all fractions.

1) $\cos X$



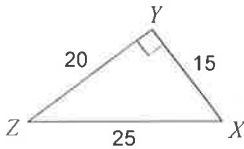
$$\frac{14}{50} = \frac{7}{25}$$

2) $\cos A$



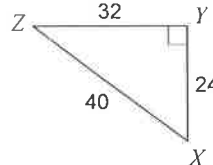
$$\frac{24}{40} = \frac{3}{5}$$

3) $\sin X$



$$\frac{20}{25} = \frac{4}{5}$$

4) $\tan Z$



$$\frac{24}{32} = \frac{3}{4}$$

Find the value of each trigonometric ratio to the nearest ten-thousandth.

5) $\sin 12^\circ$

$$.2079$$

6) $\sin 23^\circ$

$$.3907$$

Find each angle measure to the nearest degree.

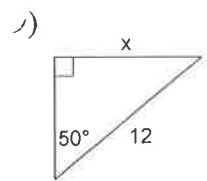
7) $\cos V = 0.6947$

$$46^\circ$$

8) $\tan V = 1.4826$

$$56^\circ$$

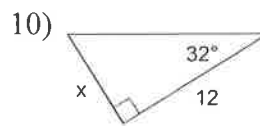
Find the missing side. Round to the nearest tenth.



$$\sin(50) = \frac{x}{12}$$

$$.766 = \frac{x}{12}$$

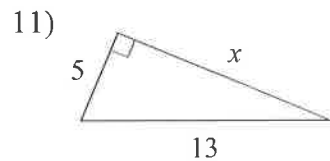
$$x = 9.2$$



$$\tan(32) = \frac{x}{12}$$

$$.6249 = \frac{x}{12}$$

$$x = 7.5$$

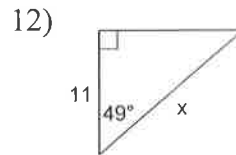


$$5^2 + x^2 = 13^2$$

$$25 + x^2 = 169$$

$$x^2 = 144$$

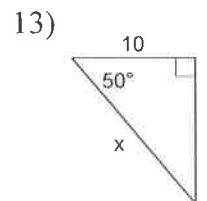
$$x = 12$$



$$\cos(49) = \frac{11}{x}$$

$$.6561x = 11$$

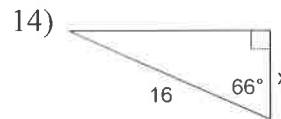
$$x = 16.8$$



$$\cos(50) = \frac{10}{x}$$

$$.6428x = 10$$

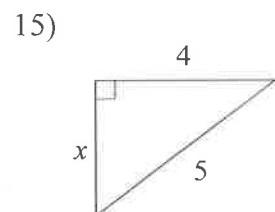
$$x = 15.6$$



$$\cos(66) = \frac{x}{16}$$

$$.4067 = \frac{x}{16}$$

$$x = 6.5$$

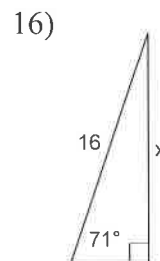


$$x^2 + 4^2 = 5^2$$

$$x^2 + 16 = 25$$

$$x^2 = 9$$

$$x = 3$$




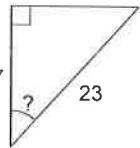
$$\sin(71) = \frac{x}{16}$$

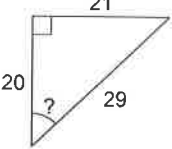
$$.9455 = \frac{x}{16}$$

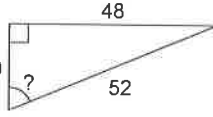
$$x = 15.1$$

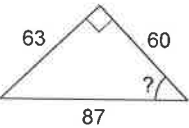
Find the measure of the indicated angle to the nearest degree.

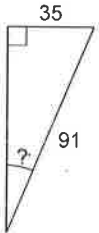
17)  $\sin^{-1}\left(\frac{16}{26}\right) = \boxed{38^\circ}$

18)  $\cos^{-1}\left(\frac{17}{23}\right) = \boxed{42^\circ}$

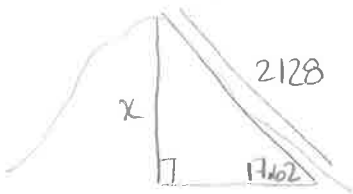
19)  $\sin^{-1}\left(\frac{21}{29}\right)$
 $\cos^{-1}\left(\frac{20}{29}\right)$
 $\tan^{-1}\left(\frac{21}{20}\right)$ } = $\boxed{46^\circ}$

20)  $\sin^{-1}\left(\frac{48}{52}\right)$
 $\cos^{-1}\left(\frac{20}{52}\right)$
 $\tan^{-1}\left(\frac{48}{20}\right)$ } = $\boxed{67^\circ}$

21)  $\sin^{-1}\left(\frac{63}{87}\right)$
 $\cos^{-1}\left(\frac{60}{87}\right)$
 $\tan^{-1}\left(\frac{63}{60}\right)$ } = $\boxed{46^\circ}$

22)  $\sin^{-1}\left(\frac{35}{91}\right)$
 $\cos^{-1}\left(\frac{84}{91}\right)$
 $\tan^{-1}\left(\frac{35}{84}\right)$ } = $\boxed{23^\circ}$

- 23) The gondola ski lift at Whistler Mountain in BC has a length of 2128 metres. The angle between the horizon and the gondola cable is 17.62° . How tall is the gondola ski lift, to the nearest tenth?

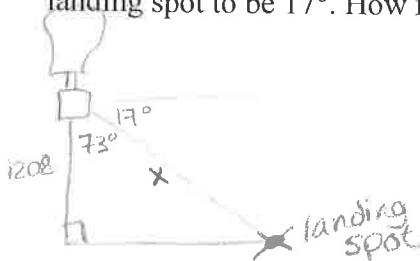


$$\sin(17.62) = \frac{x}{2128}$$

$$.3027 = \frac{x}{2128}$$

$$x = \boxed{644.2 \text{ metres}}$$

- 24) A balloonist records her altitude as 1208 feet. At the same time she measures the angle of depression of the landing spot to be 17° . How far away, to the nearest foot, is the landing spot from the balloon?

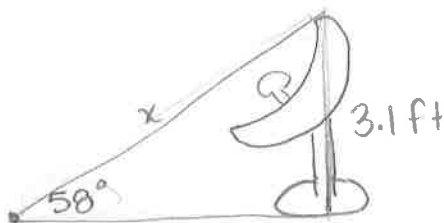


$$\cos(73) = \frac{1208}{x}$$

$$.2924x = 1208$$

$$x = \boxed{4132 \text{ ft}}$$

- 25) In order to anchor better your TV satellite dish you decide to attach a wire from its top to the ground. The top is at a height of 3.1 feet. For best results, you are told that the angle between the wire and the ground should be 58° . You decide the wire will need an extra 1.2 feet for fastening the wire to the dish and to the ground. How long a wire do you need to buy, to the nearest tenth?



$$\sin(58) = \frac{3.1}{x}$$

$$.8480x = 3.1$$

$$x = 3.6555$$

$$+ \text{extra } 1.2 \text{ ft}$$

$$\text{wire} = \boxed{4.9 \text{ ft}}$$