

~~Mar 12~~

Date Feb. 26

~~Feb 23~~- bell ringer

Get a graphing calculator from the front table. If you have a scientific calculator, you may use you it instead of mine.

Find the distance between the following points .

~~$(\frac{4}{5}, -1)$ $(2, \frac{1}{2})$~~

$(\frac{2}{3}, \frac{3}{4})$ $(-2, 3)$

$$d = \sqrt{(-2 - \frac{2}{3})^2 + (3 - \frac{3}{4})^2}$$

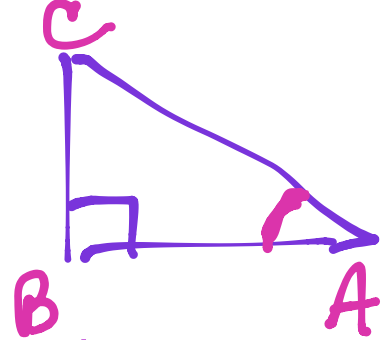
$$d = \sqrt{(-\frac{8}{3})^2 + (\frac{9}{4})^2}$$

$$d = \sqrt{\frac{64}{9} + \frac{81}{16}} = \sqrt{\frac{1024}{144} + \frac{729}{144}}$$

$$d = \sqrt{\frac{1753}{144}} = \frac{\sqrt{1753}}{12}$$

Learning target:

You will solve right triangles by using Trig ratios.



Sine



$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$$

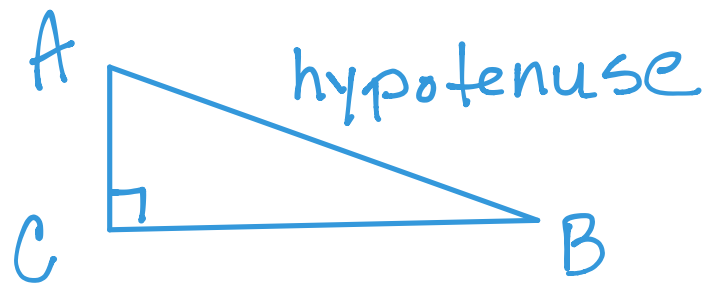
Cosine

Tangent

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan A = \frac{\text{opposite}}{\text{adjacent}}$$

SOH CAH TOA



$$\frac{o}{h} \quad \sin A = \frac{BC}{AB} \quad \frac{a}{h} \cos A = \frac{AC}{AB}$$

$$\frac{o}{a} \tan A = \frac{BC}{AC}$$

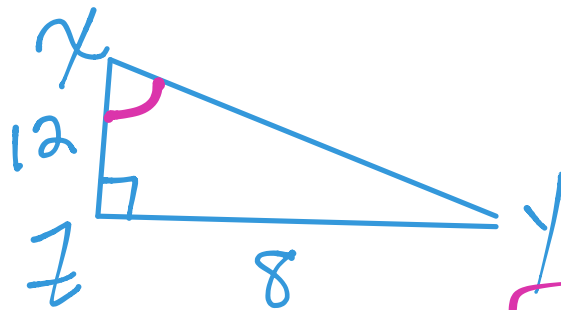
$$\textcircled{4} 9.659$$

$$\textcircled{5} 0.6018$$

$$\textcircled{7} 0.2493$$

$$\textcircled{6} 0.9205$$

14)



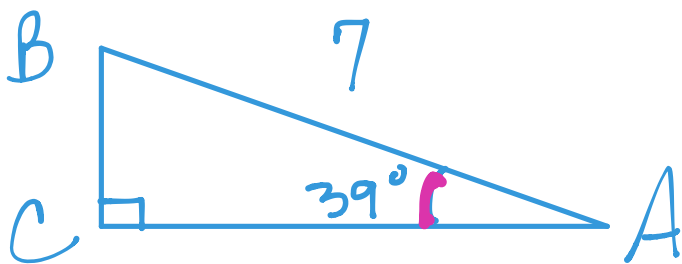
Toa

$$\tan X = \frac{8}{12}$$

$$X \approx 34^\circ$$

Solve the right triangle

①



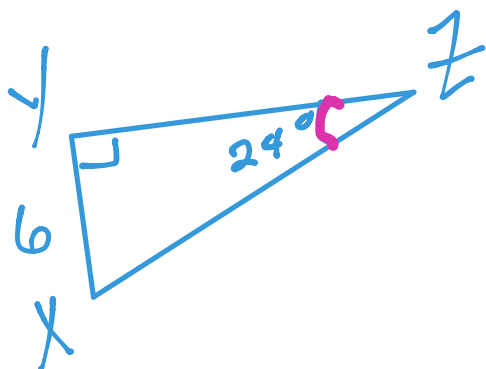
$$m\angle B = \underline{51^\circ}$$

$$\overline{BC} = \underline{4.4}$$

$$\overline{AC} = \underline{5.4}$$

$$7 \cos 39 = \frac{AC \cdot 7}{7} \quad \left\{ \begin{array}{l} 7 \sin 39 = \frac{BC \cdot 7}{7} \\ AC \approx 5.4 \\ BC \approx 4.4 \end{array} \right.$$

②



$$m\angle X = \underline{66^\circ}$$

$$\overline{YZ} = \underline{14.8}$$

$$\overline{XZ} = \underline{13.5}$$

$$\sin 24 = \frac{6}{XZ} \quad \left\{ \begin{array}{l} \tan 24 = \frac{6}{YZ} \\ \sin 24(XZ) = 6 \\ \tan 24(YZ) = 6 \end{array} \right.$$

$$\sin 24(XZ) = 6 \quad \left\{ \begin{array}{l} \tan 24(YZ) = 6 \end{array} \right.$$

$$\overline{\sin 24}$$

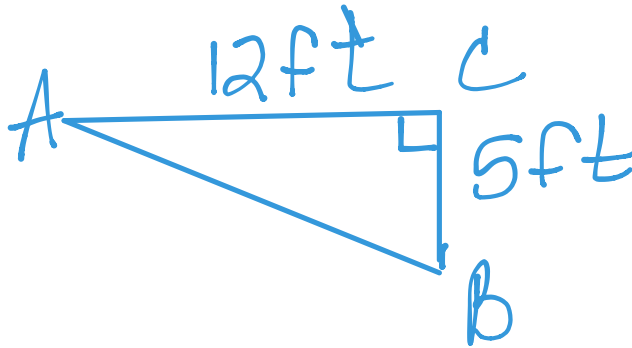
$$\overline{\sin 24}$$

$$xz = 14.8$$

$$yz = \frac{6}{\tan 24}$$

$$yz = 13.5$$

3



$$m\angle A = \underline{23^\circ}$$

$$m\angle B = \underline{67^\circ}$$

$$AB = \frac{12.8 \text{ ft}}{13.0 \text{ ft}}$$

$$\tan A = \frac{5}{12}$$

$$A = 23^\circ$$

$$\sin 23 = \frac{5}{AB}$$

$$AB = \frac{5}{\sin 23}$$

$$AB = 12.8$$

$$\cos 23 = \frac{12}{AB}$$

$$AB = \frac{12}{\cos 23}$$

$$AB = 13.0$$

Assignment

Trig WS

31)

$$17 = \sqrt{(5+3)^2 + (2-a)^2}$$

$$17 = \sqrt{64 + 4 - 4a + a^2}$$

$$17^2 = \left(\sqrt{a^2 - 4a + 68} \right)^2$$

$$289 = a^2 - 4a + 68$$

$$\begin{array}{r} 201 = a - 4a + 100 \\ -289 \quad \quad \quad -289 \\ \hline \end{array}$$

$$0 = a^2 - 4a - 221$$

$$0 = (a - 17)(a + 13)$$