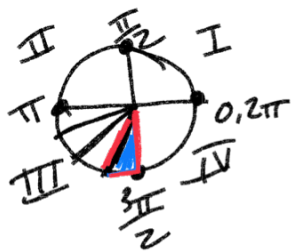


MTH-PT Trigonometry Session 12 3/6

1.) $\sin\left(\frac{4\pi}{3}\right)$
 ↑
 y $\left(\frac{\sqrt{3}}{2}\right)$



2.) $\cos 315^\circ = \frac{\sqrt{2}}{2}$

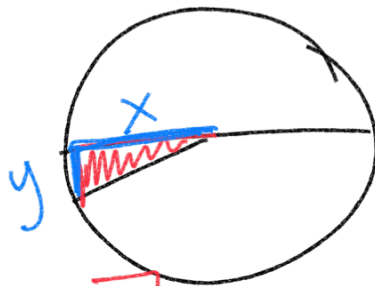
3.) $\tan\left(\frac{3\pi}{4}\right) = \frac{\sin \frac{3\pi}{4} = \frac{\sqrt{2}}{2}}{\cos \frac{3\pi}{4} = -\frac{\sqrt{2}}{2}} = -1$

4.) $\sec 120^\circ = \frac{1}{\cos}$
 flip!
 $\cos 120^\circ = \frac{-1}{2}$
 -2

5.) $\csc(270^\circ) = \frac{1}{\sin}$

$\sin 270^\circ = -\frac{1}{1}$
 -1

6.) $\cot\left(\frac{7\pi}{6}\right) = \frac{\cos \theta}{\sin \theta}$
 $\cos \frac{7\pi}{6} \rightarrow \frac{\sqrt{3}}{2}$
 $\sin \frac{7\pi}{6} \rightarrow \frac{-1}{2}$
 $= \sqrt{3}$

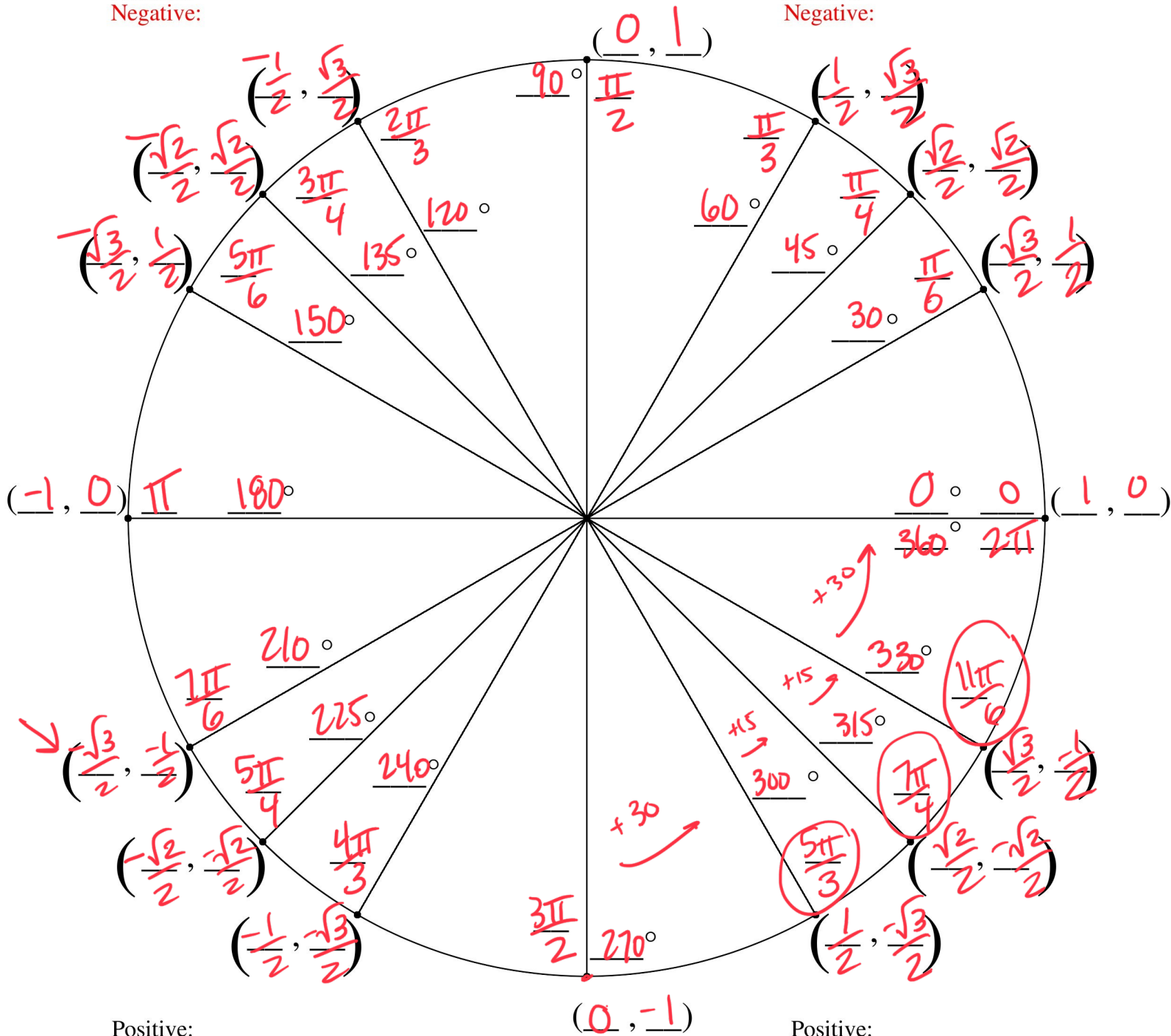


$0 \quad \frac{1}{2} \quad \frac{\sqrt{2}}{2} \quad \frac{\sqrt{3}}{2} \quad 1$

Fill in The Unit Circle

Positive:
Negative:

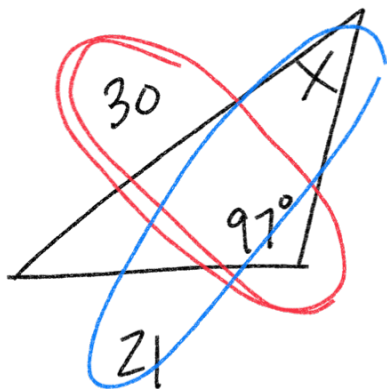
Positive:
Negative:



Positive:
Negative:

Positive:
Negative:

Law of Sines



$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

$$\frac{\sin 97^\circ}{30} = \frac{\sin X}{21}$$

$$\sin^{-1}\left(\frac{21 \sin 97^\circ}{30}\right)$$

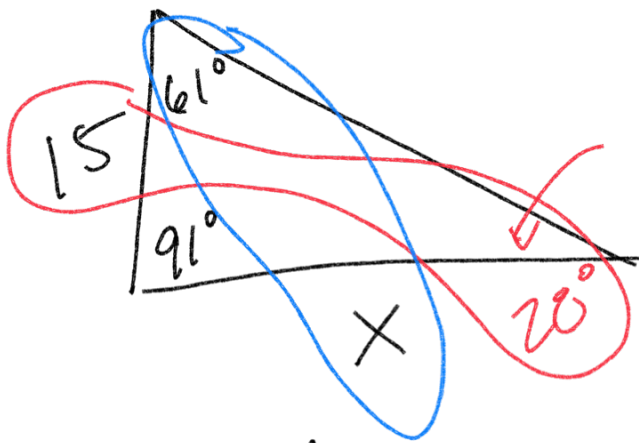
$$\frac{21 (\sin 97^\circ)}{30} = \frac{30 \sin X}{30}$$

$$\frac{21 (\sin 97^\circ)}{30} = \sin X$$

$$0.6948 = \sin X$$

$$\sin^{-1}(0.6948) = X$$

$$\boxed{44^\circ}$$



$$180 - (91 + 61)$$

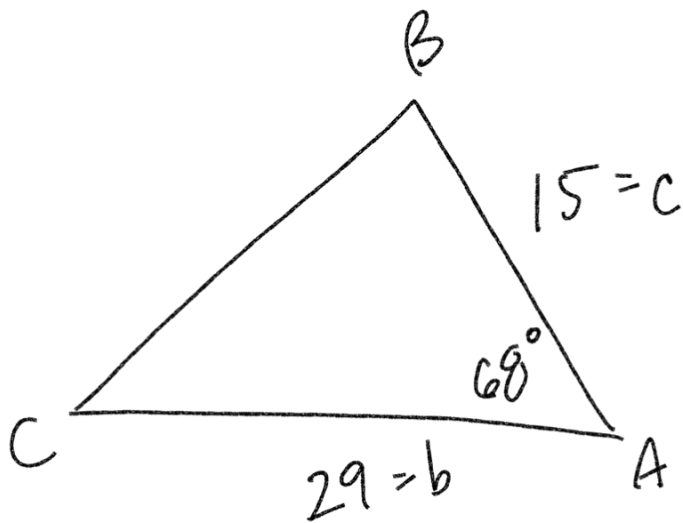
$$180 - 152 = 28$$

$$\frac{\sin 28^\circ}{15} = \frac{\sin 61^\circ}{X}$$

side-angle
partnership

$$X (\sin 28^\circ) = \frac{15 (\sin 61^\circ)}{\sin 28^\circ}$$

$$X = \boxed{27.9}$$

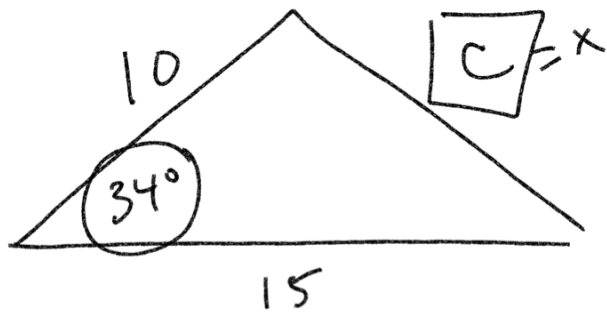


When we don't have
a side-angle pair
Law of Cosines
(like the pythagorean
theorem)

$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$x^2 = (15)^2 + (29)^2 - 2(15)(29) \cos 68^\circ$$

$$\boxed{27.2}$$



Law of cosine

$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$x^2 = 10^2 + 15^2 - 2(10)(15) \cos 34$$

$$x = \sqrt{10^2 + 15^2 - 2(10)(15) \cos 34}$$

$$x = 8.73$$