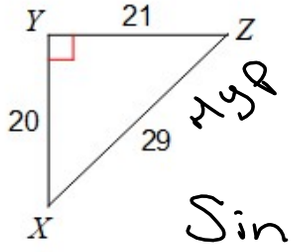
Find the ratios for the trig. functions you know.

SOH CAH TOA

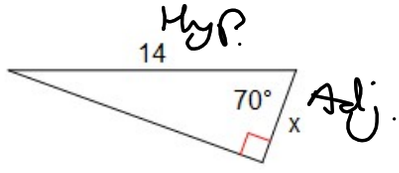
$S\frac{O}{H}\ C\frac{A}{H}\ T\frac{O}{A}$



$\sin Z = \frac{20}{29}$ $\cos z = \frac{21}{29}$ $\tan z = \frac{2}{21}$

$\sin x = \frac{21}{29}$ $\cos x = \frac{20}{29}$ $\tan x = \frac{21}{20}$

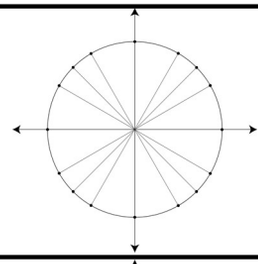
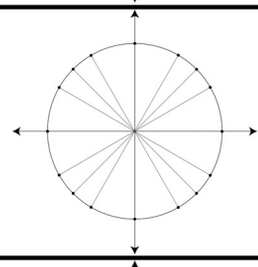
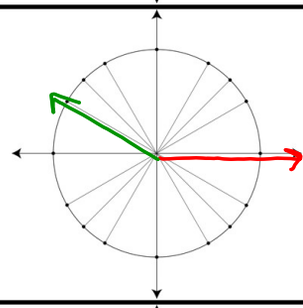
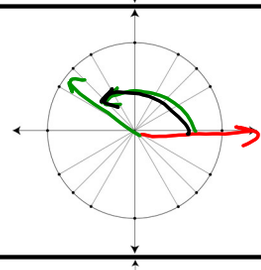
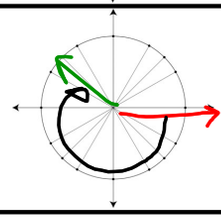
Find the missing side using your calculator. (*where do I round if it doesn't tell me?)



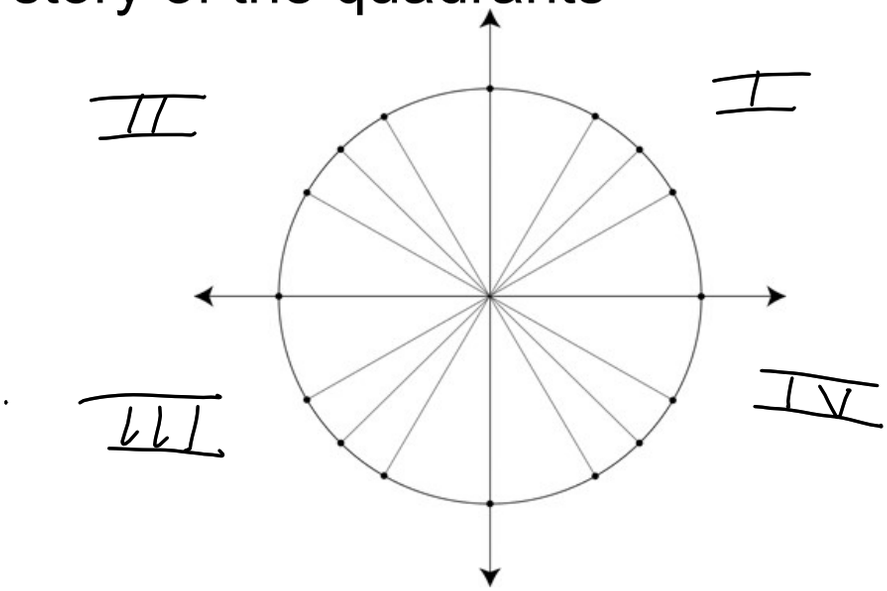
$14 \cdot \cos 70 = \frac{x}{14} \cdot 14$

$x = 4.788$

Vocabulary

Term	Definition or "How do I Find It?"	Example
An angle in Standard Position	When the vertex is at the origin and the initial side lies on the positive side of the x-axis.	
Initial Side	The ray that lies on the x-axis when an angle is in standard position, it is where the angle is measured from.	
Terminal Side	The resulting ray once the angle is rotated around the origin forms the other side of the angle.	
Positive Angle	Produced when the terminal side is rotated counterclockwise around the origin.	
Negative Angle	Produced when the terminal side is rotated clockwise around the origin.	
Coterminal Angles	Two angles are coterminal when they share the same terminal side.	Name 2 coterminal angles for 75 degrees: 435° 285°
Reference Angle Distance to the axis	An acute angle between 0 and 90 degrees in relation to the x-axis	What is the reference angle for 120 degrees? 60° 295 degrees? 65° 540 degrees? 0° -80 degrees? 90

The story of the quadrants



Find at least two coterminal angles,
one positive and one negative.

1. $179°$ $539°, -181°$ Quadrantal
2. $442° - 278°, +82°$
3. $-800°$ $280°$ $-440°$

Where does pi come from?

Radian - One radian is the measure of a central angle, θ that intercepts an arc *s* equal in length to the radius *r* of the circle.

Arc length (s) = Radius (r)

s/r = radian measure of central angle

$2\pi r = s$ when the corresponding central angle is one full revolution

Conversions

If your traveling 50 miles per 30 minutes. You have traveled 130 miles. How many minutes has it been?

$$\frac{50 \text{ miles}}{30 \text{ min}} = \frac{130 \text{ miles}}{x}$$

or

If you know there are 5280 feet in a mile and 12 inches in a foot. How many inches have you gone in 1.4 miles?

How do I convert radians into degrees and degrees into radians?

$$= \frac{\pi}{180^\circ}$$

or

$$= \frac{180^\circ}{\pi}$$

Convert from Radians to Degrees

$\frac{5\pi}{8x} = \frac{\pi}{180}$ $\quad \frac{8\pi x}{8\pi} = \frac{900}{8\pi} \rightarrow x = \frac{225}{2}$

$-\frac{7\pi}{3}$

Convert from Degrees to Radians

$\frac{240^\circ}{x} = \frac{180}{\pi}$ $\quad \frac{180x}{180} = \frac{240\pi}{180}$

$= \frac{4\pi}{3}$

50°