TRIG.

Ch 6.

Overview (Always read the Chapter Overview).

My Overview of ALL TRIG.

"Big-3"

(a) Pythagorean Theorem

\[ a^2 + b^2 = c^2 \]

Law of Similar Triangles

\[ \frac{y}{x} = \frac{y'}{x'} \]

Side Trip. \( \frac{a}{b} \) is a "ratio" and \( \frac{a}{b} = \frac{c}{d} \) is a "proportion."

"Clear" fractions \( \frac{a}{b} = \frac{c}{d} \), then \( ad = bc \) \( \checkmark \)

Also if \( \frac{a}{b} = \frac{c}{d} \), then \( \frac{b}{a} = \frac{d}{c} \) \( \checkmark \)

Also if \( \frac{a}{b} = c \), then \( a = bc \) \( \checkmark \)

1. What is an angle?

(Back-Up: — What is a ray?)

Ray has an initial point, but no terminal point.

If I "glue together" two rays at their initial points, I have an angle.

\[ \alpha = \text{alpha} \]

\[ \angle \alpha \]

\[ \Delta = \text{delta} \]

\[ \beta = \text{beta} \]

\[ \gamma = \text{gamma} \]

\[ \delta = \text{delta} \]

\[ \theta = \text{theta} \]

\[ \phi = \phi \]

\[ \omega = \omega \]

\[ \psi = \psi \]
2. **Radian measure of an angle.**

- Draw Circle of $r=1$ w/ center @ vertex
- $\angle A$ "subtends" the circle in an arc.
- Let's call the length of that arc $s$

**Notation:** The measure of angle $A$ is $s$.

$$m \angle A = s \quad (\text{rad})$$

3. What is the formula for the circumference of a circle of radius $r$?

$$C = 2\pi r$$

related to $C = \pi \cdot D$

comes from

$$\frac{C}{D} = \pi$$

So... if $r=1$, $C = 2\pi$

**The radian measure of a complete rotation (360°) is $2\pi$ radians.**

Cut things up. — **if**

"therefore"

$$m \angle A = \frac{\pi}{2} \quad \text{rad.}$$

$$\angle A = \frac{\pi}{2}$$

So the radian measure of a right angle is $\frac{\pi}{2}$ radians.