§6.1 - Prelim.

3 principles of TRIG.

1) Law of similar triangles.
2) Pythagorean Theorem.
3) Equation $S = r \theta$
2. Congruent triangles have the same area.

3. Parallel

\[ \text{Area } \triangle ABC = \text{Area } \triangle ABC' \]
§ 6.1 proper.

Line

Half-line

Ray

does not include e.p.

ep included
The union of two rays w/ common ep. — angle

Vertex

Initial side

Terminal side

Read over pp. 344-47
360°

90° right angle

180° straight angle.
Fractions of a degree.

1. 60 min. = 1 degree
   60' = 1°
   
   60 sec = 1 min
   60" = 1'

2. 25° 20' 15"
   25 degrees 20 min 15 sec.
   Converting DMS into DD and vice versa
25° 20' 15"

Convert to DD (decimal degrees)

\[ 60'' = 1' \]
\[ 1'' = \frac{1}{60} \]

\[ \therefore 15'' = \frac{15}{60} = \frac{1}{4} \]

\[ \therefore 20' 15'' = 20.25' \]
\[ = 20\frac{1}{4} = \frac{81}{4} \]

\[ 60' = 1^\circ \]
\[ 1' = \frac{1}{60}^\circ \]

\[ \therefore \frac{81}{4}' = \frac{81}{4} \cdot \frac{1}{60}^\circ \]
\[ = \frac{81}{240} = 0.3375^\circ \]

\[ \therefore 25^\circ 20' 15'' = 25.3375^\circ \]
Convert $36.53^\circ$ to DMS. (Longhand)

$1^\circ = 60'$

$0.53^\circ = 0.53 \times 60' = 31.80'$

$1' = 60''$

$0.80' = 0.80 \times 60'' = 48.00''$

$\therefore 36.53^\circ = 36^\circ 31' 48''$