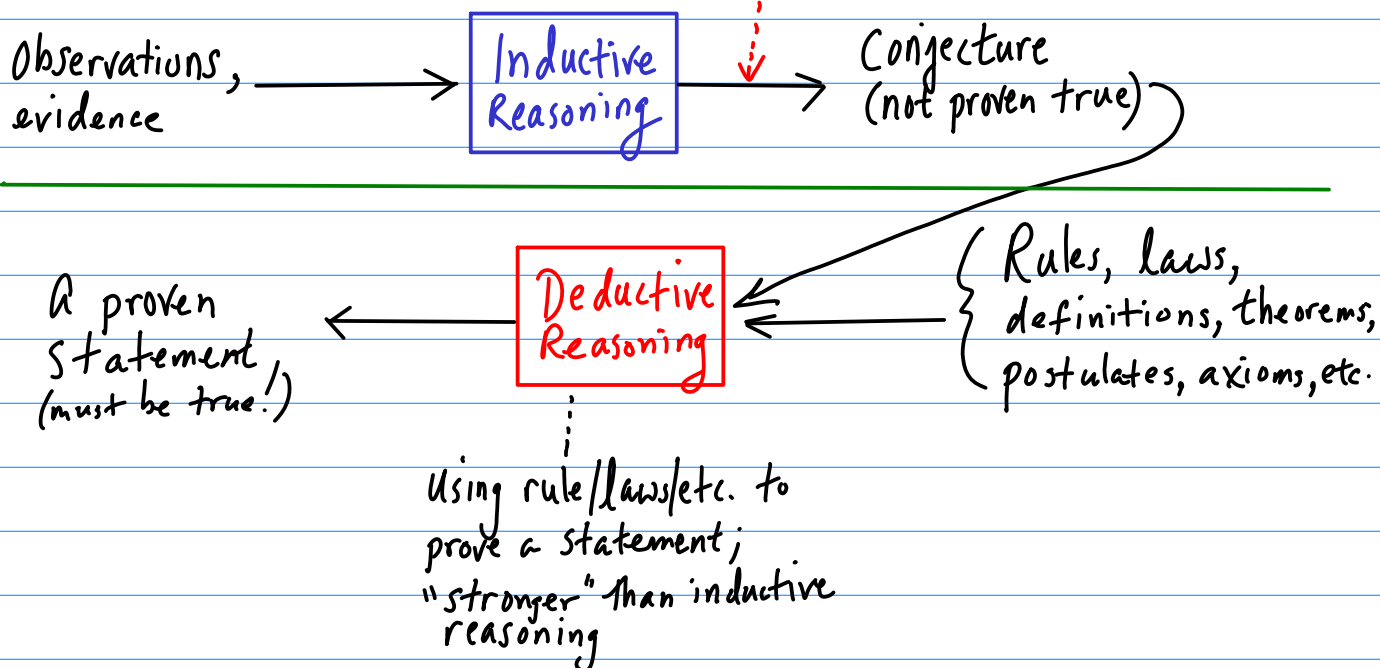


§ 2.4: Deductive Reasoning



Ex:

Given: $\angle J$ & $\angle K$ are complementary; $m\angle J = 67^\circ$

Prove: $m\angle K = \boxed{23^\circ}$

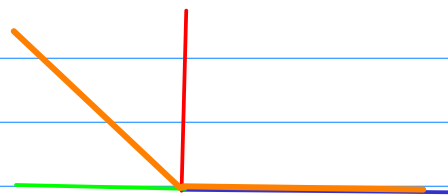


Statement	Reason
1. $\angle J$ & $\angle K$ are complementary	1. Given
2. $m\angle J + m\angle K = 90^\circ$	2. Def'n of Complementary \angle 's
3. $m\angle J = 67^\circ$	3. Given
4. $67^\circ + m\angle K = 90^\circ$	4. Substitution
5. $67^\circ + m\angle K - 67^\circ = 90^\circ - 67^\circ$; $m\angle K = 23^\circ$	5. Subtraction Prop.

QED

Ex:

Given: $\angle A$ is obtuse ^{"gives"}
Prove: Bisecting $\angle A$ yields 2 acute \angle 's



Obtuse \angle : $> 90^\circ$,
 $< 180^\circ$

$\angle A$ is obtuse \leftarrow Given

$m\angle A > 90^\circ$ & $< 180^\circ$ \leftarrow Defn of obtuse

\overrightarrow{AB} bisects $\angle A$, making
2 \cong \angle 's, each measuring $\frac{1}{2} \cdot m\angle A$ \leftarrow Defn of \angle Bisector

$\frac{1}{2} (m\angle A) < (180^\circ) \frac{1}{2}$ \leftarrow Mult. Prop.

$$\frac{1}{2} \cdot m\angle A < 90^\circ$$

the new \angle 's, measuring $< 90^\circ$, are acute \leftarrow Defn of Acute \angle

