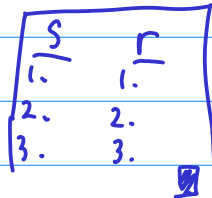
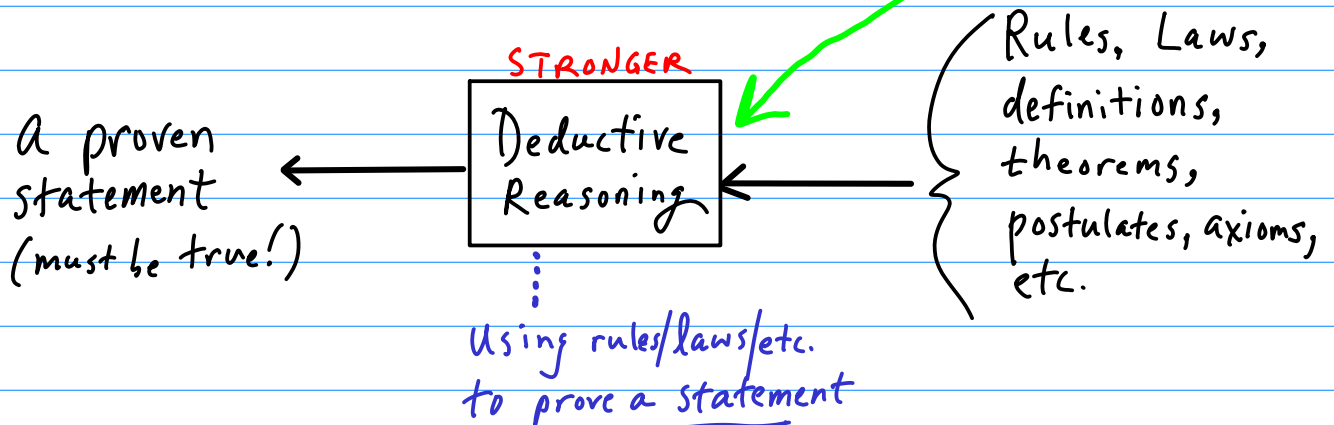
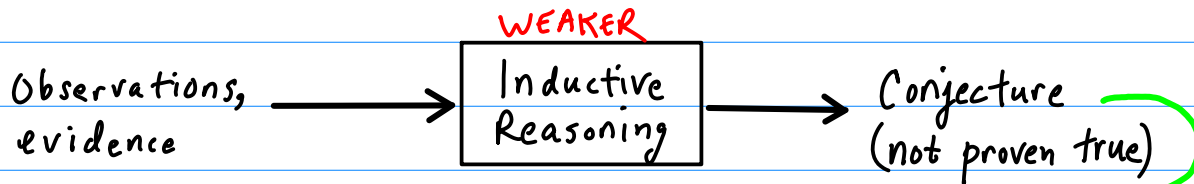
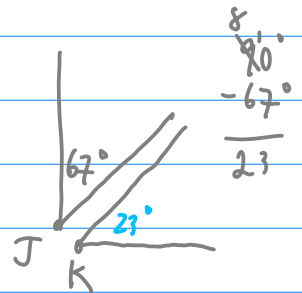


§2.4 : Deductive Reasoning

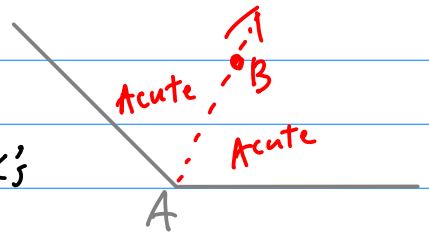


Ex: Given: $\angle J$ & $\angle K$ are complementary; $m\angle J = 67^\circ$
 Prove: $m\angle K = \underline{23^\circ}$.



| Statement | Reason |
|--|--|
| 1. $\angle J$ & $\angle K$ are complementary. | 1. Given |
| 2. $m\angle J$ + $m\angle K = 90^\circ$ | 2. Def'n of Comp. \angle 's |
| 3. $m\angle J = \underline{67^\circ}$ | 3. Given |
| 4. $67^\circ + m\angle K = 90^\circ$ | 4. Substitution (Steps <u>2</u> & <u>3</u>) |
| 5. $67^\circ + m\angle K - 67^\circ = 90^\circ - 67^\circ$; $m\angle K = 23^\circ$ | 5. Subtraction Prop. |
| | Q.E.D. |

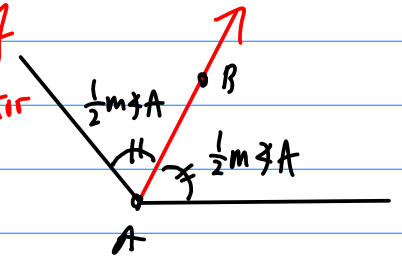
Ex: Given: $\angle A$ is obtuse "gives"
 Prove: Bisecting $\angle A$ yields 2 acute \angle 's



$\angle A$ is obtuse ← given

$m\angle A > 90^\circ$ & $m\angle A < 180^\circ$ ← def'n of obtuse

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



$\frac{1}{2}(m\angle A) < (180^\circ) \frac{1}{2}$;
 $\frac{1}{2}m\angle A < 90^\circ$ ← Mult. Prop.

the new \angle 's, measuring ← def'n of Acute
 $< 90^\circ$, are acute



* Overlapping Segments