

## Famous Forms

### Modus Ponens

$P \supset Q$   
 $P$   
 $\triangleright Q$

### Modus Tollens

$P \supset Q$   
 $\sim Q$   
 $\triangleright \sim P$

### Hypothetical Syllogism

$P \supset Q$   
 $Q \supset R$   
 $\triangleright P \supset R$

### Disjunctive Syllogism

$P \vee Q$     -or-     $P \vee Q$   
 $\sim P$                        $\sim Q$   
 $\triangleright Q$                        $\triangleright P$

### Constructive Dilemma

$P \vee Q$     -or-     $P \vee Q$   
 $P \supset R$                        $P \supset R$   
 $Q \supset S$                        $Q \supset R$   
 $\triangleright R \vee S$                        $\triangleright R$

### Reductio ad Absurdum

$\begin{array}{|l} \hline P \\ \hline Q \\ \sim Q \end{array}$     -or-     $\begin{array}{|l} \hline \sim P \\ \hline Q \\ \sim Q \end{array}$   
 $\triangleright \sim P$                        $\triangleright P$

### Conditional Proof

$\begin{array}{|l} \hline P \\ \hline Q \end{array}$   
 $\triangleright P \supset Q$

### DeMorgan's Laws

$\sim(P \& Q) \triangleleft \triangleright \sim P \vee \sim Q$   
 $\sim(P \vee Q) \triangleleft \triangleright \sim P \& \sim Q$

### Contraposition

$P \supset Q \triangleleft \triangleright \sim Q \supset \sim P$

### Implication

$P \supset Q \triangleleft \triangleright \sim P \vee Q$