The Square of Opposition
and Immediate Inference
**Categorical Logic**

The Square of Opposition

- **All dogs are mammals.**
- **No dogs are mammals.**
- **Some dogs are mammals.**
- **Some dogs are not mammals.**
Categorical Logic
The Square of Opposition

Quantity

Universal
all of a class

Particular
at least one of a class
Categorical Logic
The Square of Opposition

Quality

Affirmative
(are)

Negative
(are not)
Categorical Logic
The Square of Opposition

Affirmative    Negative

Universal

A    E

Particular

I    O
Categorical Logic
The Square of Opposition

Some dogs are

A
E
I
O
Categorical Logic
Immediate Inference

A
E
I
O
Categorical Logic
Immediate Inference

A

I

E

O
Categorical Logic
Immediate Inference
Some dogs are A

Contradiction

opposite truth values

Categorical Logic
Immediate Inference
Contrary

A

cannot both be true (can both be false)

E

I

O
Some dogs are A

E

sub-Contrary

at least one is true (can’t both be false)

O

sub-Contrary

Categorical Logic

Immediate Inference
Categorical Logic
Immediate Inference

Subalternation

truth flows down,
falsity flows up
Categorical Logic
Immediate Inference

Contrary

Contradiction

sub-Contrary

Subalternation

A

I

E

O