Four Great Logical Arguments of the Middle Way
1. The investigation of the cause: the Diamond Splinters
2. The investigation of the result: refuting existent or non-existent results
3. The investigation of the essential identity: ‘neither one nor many’
4. The investigation of all: the Great Interdependence

1. The Investigation of the Cause: the Diamond Splinters

i. Refutation of Production from Four Extremes

a) Production from Self
[Root Verses of the Middle Way]:
Not from self, not from other,
Not from both and not from neither—
Not for any entity at all anywhere,
Is there ever any production.

b) Production from Other
[In the Introduction to the Middle Way]:
If things could arise on the basis of something ‘other’,
Well then, thick darkness should come from flames.
And: For the cause and effect to be entirely ‘other’, Is never feasible.
If the cause and effect were entirely other, Causes would be just the same as non-causes.

c) Production from Both
[In the Introduction to the Middle Way]:
Production from both is inherently unreasonable,
Because it would entail the problems already explained.
So, this position is unacceptable from the perspective of either of the two truths.

d) Production without Cause
[In the Introduction to the Middle Way]:
If the world were devoid of any cause, then it might be apprehended
Like the fragrance and colour of a blue lotus in space,
Yet this world is apprehended in all its rich variety,
And so, just like one’s own mind, it should be known to arise from causes.

2. The Investigation of the Result: Refutation of Existent or Non-Existent Production
[The Introduction to the Middle Way says]:
If it is something existent, what need is there for its production? But if it does not exist,
what could be done to it?
If it is both [existent and non-existent], what can be done? And if neither, what can be done?

3. Investigation of the Essential Identity: ‘Neither One Nor Many’

4. Analysis of All: The Logical Argument of Great Interdependence
This king of reasoning, the Great Interdependence, includes all the other types of ultimate logic, such as the Diamond Splinter and so on, because they are all concerned with the seemingly real, unexamined appearances of dependent origination.

http://www.lotsawahouse.org/tibetan-masters/mipham/four-great-logical-arguments