

Nervous Presidents

Note Title

02/10/2011

3 couples (president and bodyguard) want to cross a river.

Everyone can row. There is only one boat.

A president cannot be with another president's bodyguard unless his/her own bodyguard is also present.

The boat can carry two people at a time.

How can they get across?

Notation

||

river

nC n couples, eg 3C

nP n presidents, eg 1P

nB n bodyguards, eg 2B

State

2C || 1C

State

2C || 1C



valid

State

2C || 1C



valid

1C1P || 1C1B



invalid

State

2C || 1C



valid

1C1P || 1C1B



invalid

Transition

1C | 2B | 2P

State

2C || 1C

✓ valid

1C1P || 1C1B

✗ invalid

Transition

1C | 2B | 2P

State-transition

1C2B || 2P

1C | 2B | 2P

1C || 2C

Notation



river

nC

n couples, eg.

2C || 1C

nP

n presidents

nB

n bodyguards