

V = VALID      I = INVALID

## SYMBOLIC LOGIC - HOMEWORK 1

Decide if the arguments below are valid or invalid. If invalid, give a counterexample.

- ✓ 1) Either Clinton or Dole was president in 1999. Dole was not president in 1999. Therefore, Clinton was president in 1999.
- I 2) Not both Clinton and Dole were president in 1999. Dole was not president in 1999. Therefore, Clinton was president in 1999.
- I 3) Not both Clinton and Gore were president in 1999. Clinton was not president in 1999. Therefore, Gore was not president in 1999.
- I 4) If Tinker is a male cat, then Tinker will not have kittens. Tinker will not have kittens. Therefore, Tinker is a male cat.
- ✓ 5) If Tinker is a male cat, then Tinker will not have kittens. Tinker will have kittens. Therefore, Tinker is not a male cat.
- I 6) If Tinker is a male cat, then Tinker will not have kittens. Tinker is not a male cat. Therefore, Tinker will have kittens.
- ✓ 7) If Tinker is either a cat or dog, then Tinker is a fur-bearing mammal. Therefore, if Tinker is a cat, Tinker is a fur-bearing mammal.
- I 8) If I neither diet nor exercise, I will gain weight. Therefore, if I do not diet, I will gain weight.
- ✓ 9) If I exercise, I will neither gain weight nor lose muscle tone. Therefore, if I exercise I will not lose muscle tone.
- ✓ 10) If I don't exercise, I will gain weight and lose muscle tone. Therefore, if I don't gain weight, I have exercised.
- I 11) Some Republicans are wealthy. Some wealthy people are not Democrats. Therefore, some Republicans are not Democrats.
- ✓ 12) All US presidents have been men. No man has experienced childbirth. Therefore, no US president has experienced childbirth.
- I 13) All US presidents have been men. No US president has experienced childbirth. Therefore, no man has experienced childbirth.
- I 14) All great works of art are controversial. Andy Warhol's creations are controversial. Therefore, Andy Warhol's creations are great works of art.
- I 15) No cats are dogs. No dogs are horses. Therefore, no cats are horses.
- I 16) Not all corporate executives are men. All corporate executives are wealthy people. Therefore, some wealthy people are not corporate executives.
- ✓ 17) Not all corporate executives are men. All corporate executives are wealthy people. Therefore, some wealthy people are not men.
- I 18) All frogs are reptiles. Some reptiles are poisonous. Therefore some frogs are poisonous.
- ✓ 19) Some preachers are wealthy people. All wealthy people will get to heaven. Therefore, some preachers will get to heaven.
- I 20) Some wealthy people will get to heaven. No one who gets to heaven has committed a mortal sin. Anyone who commits murder has committed a mortal sin. Therefore, some murderers are not wealthy.