

Exercise 1

State whether each argument is valid or invalid.

A

High idle is caused by a transmission problem, an oil problem, or both.

High idle is not caused by an oil problem.

Therefore, high idle is caused by both.

B

If the moon is made of green cheese, then cows jump over the moon.

The moon is made of green cheese.

Therefore, cows jump over the moon.

C

If I go dancing I will have sex

If I have sex I will have a baby

Therefore, if I go dancing I will have a baby

Exercise 2

Each argument is invalid; below each, add exactly one premise to make it valid.

A

If you keep driving your car with a faulty carburetor then it will eventually explode.

Therefore, if you keep driving your car with a faulty carburetor then you will eventually get hurt.

B

Abortion is morally wrong.

Abortion is not a constitutional right.

Therefore, abortion ought to be against the law.

C

The United States is not fiscally conservative.

Any nation that is not fiscally conservative has too much debt.

Therefore, the United States has too much debt.

D

No one comes to the Father but through Jesus.

Therefore, a person goes to heaven only if they believe in Jesus.

E

If homosexual orientation is genetically determined then it is morally permissible.

Homosexual orientation is genetically determined.

Therefore, homosexual sex is morally permissible.

Exercise 3

For each pair, circle the letter that most accurately and completely describes them.

1. a valid argument, a sound argument

- (a) being valid is sufficient for being sound but being sound is not suff. for being valid
- (b) being sound is sufficient for being valid and being valid is sufficient for being sound
- (c) being valid is necessary and sufficient for being sound
- (d) being valid is necessary for being sound and being sound is sufficient for being valid
- (e) neither is necessary or sufficient for the other

2. being a taxi driver, being human

- (a) being human is sufficient for being a taxi driver
- (b) being human is necessary for being a taxi driver
- (c) being a taxi driver is necessary for being human
- (d) being human and being a taxi driver are necessary and sufficient for each other
- (e) neither is necessary or sufficient for the other

3. being colored, being green

- (a) being green is sufficient for being colored and being colored is nec. for being green
- (b) being green and being colored are necessary and sufficient for each other
- (c) being green is nec. for being colored and being colored is sufficient for being green
- (d) neither is necessary or sufficient for the other

4. playing the piano, playing an instrument

- (a) playing the piano is necessary and sufficient for playing an instrument
- (b) each is sufficient for the other
- (c) neither is necessary for the other
- (d) playing the piano is sufficient for playing an instrument and playing an instrument is necessary for playing the piano

5. living on Mars, leaving Earth

- (a) living on Mars is necessary for leaving Earth
- (b) neither is necessary or sufficient for the other
- (c) leaving Earth is nec. for living on Mars and leaving Earth is suff. for living on Mars
- (d) leaving Earth is nec. for living on Mars and living on Mars is sufficient for leaving Earth