

E. Write the conditional and converse statements that are in the biconditional.

8. Lucas answers the phone if and only if the phone rings.

Conditional: *If Lucas answers the phone, then it rang.*

Converse: *If the phone rings, then Lucas answers it.*

F. Decide whether inductive or deductive reasoning is used to reach the conclusion.

9. Andrea knows that Robin is a sophomore and Todd is a junior. All other juniors that Andrea knows of are older than Robin. Therefore, Todd is older than Robin.

Inductive

10. Chris knows that his family has spaghetti for dinner every Wednesday night. Today is Wednesday, therefore his family will have spaghetti for dinner tonight.

Deductive

G. Determine if the Law of Detachment or the Law of Syllogism is used to draw the conclusion. If the conclusion is invalid, write NO CONCLUSION.

11. If an angle measures more than 90° , then it is not acute.

The measure of $\angle ABC = 120^\circ$

$\angle ABC$ is not acute

L.O.D.

12. If you order the apple pie, then it will be served with ice cream.

Matthew was served ice cream.

Matthew ordered the apple pie.

NO CONCLUSION jumps to conclusion

13. ~~If you wear the school colors, then you have school spirit.~~

~~If you have school spirit, then the team feels great.~~

If you wear the school colors, then the team feels great.

L.O.S.

14. Solve the equation: $4 + 6(x + 7) = 2x - 8$

$$4 + 6x + 42 = 2x - 8$$

$$6x + 46 = 2x - 8$$

$$4x = -54$$

$$x = -13.5$$