Working with Deductive Reasoning

**Use the Law of Detachment or Law of Syllogism to draw a conclusion. State which law you used. If no conclusion is possible, write “not possible”.**

1. If today is Tuesday, then tomorrow is Wednesday.

Today is Tuesday.

**Conclusion:**

**By which law?**

1. An auto mechanic knows that if a car has a dead battery, the car will not start.

A mechanic works on a car and finds the battery is dead.

**Conclusion:**

**By which law?**

1. If it is Friday of PHS’ homecoming week, then there is a parade.

If there is a parade, then the marching band will play the school song.

**Conclusion:**

**By which law?**

1. If you go hunting, then you took a hunters safety course.

George goes duck hunting.

**Conclusion:**

**By which law?**

1. If you miss the bus, then you are late for school. Tyler was late for school Thursday.

**Conclusion:**

**By which law?**

**For #6-8 Use the Law of Detachment and the Law of Syllogism to draw conclusions from the following statements**

1. If a mountain is the highest in Alaska, then it is the highest in the U.S.

If an Alaskan mountain is over 20,300 ft. high, then it is the highest in Alaska.

Alaska’s Mount McKinley is 20,320 ft high.

1. If you live in Little Rock, then you live in Arkansas.

If you live in Arkansas, then you live in the 25th state to enter the Union.

Lillian lives in Little Rock.

1. If an elephant weighs more than 2,000 lbs., then it weighs more than Ellen’s car.

If something weighs more than Ellen’s car, it’s too heavy for the bridge.

Smiley the Elephant weighs 2,150 lbs.

1. Assume the following statements are true.

If Anita goes to the concert, Beth will go.

If Beth goes to the concert, Aisha will go.

If Aisha goes to the concert, Ramon will go.

**Only two of the four students went to the concert. Who were they?**

1. Two signs are posted in a haunted house:

**No one**

**Under 8**

**Allowed**

**Without**

**A parent!**

**No**

**one**

**under**

**5 allowed!**

Inside the haunted house, you see a child with his parents. What can you deduce about the age of the child based on the house rules?