Euler Diagrams

1) All math teachers love coffee
   Premises
2) Angie is a math teacher.
   Conclusion.
3) Angie loves coffee.

Is the conclusion guaranteed?
Yes - Valid
Not - Invalid.

Valid.
1. All runners are athletes.
2. Juan is not an athlete
3. Juan is not a runner

\[ \text{Athletes} \quad \text{Runners} \quad \boxed{\text{Juan}} \]

Valid.

1. Some politicians are honest.
2. Ab is honest.
3. Ab is a politician.

Invalid: Because of Ab's potential placement.
Using Euler Diagrams to Evaluate Logical Arguments

1) All math teachers love coffee.
   Angie is a math teacher.
   Therefore, Angie loves coffee.
   Valid.

2) All math teachers love chocolate.
   Anna loves chocolate.
   Therefore, Anna is a math teacher.
   Invalid.

3) All runners are athletes.
   Mary is a runner.
   Therefore, Mary is an athlete.
   Valid.

4) All runners are athletes.
   Roger is an athlete.
   Therefore, Roger is a runner.
   Invalid.
5) All runners are athletes.
   Juan is not an athlete.
   Therefore, Juan is not a runner.
   **Valid.**

6) Some nurses wear blue scrubs.
   Richard is a nurse.
   Therefore, Richard wears blue scrubs.
   **Invalid.**

7) All people who drive use fuel.
   All people who use fuel stimulate the economy.
   Some people who live in Beaumont stimulate the economy.
   Therefore, some people who live in Beaumont drive.
   **Invalid.**

8) All D.J.'s play music.
   Wolfman Jack does not play music.
   Therefore, Wolfman Jack is not a D.J.
   **Valid.**