**Question 2:** Draw a Venn diagram summarizing the variables and their associated probabilities.

**People fitting both the criteria.**

**Data:** As of 2009, Swaziland had the highest HIV prevalence in the world. 25.9% of this country's population is infected with HIV. The ELISA test is one of the first and most accurate tests for HIV. For those who carry HIV, the ELISA test is 99.7% accurate. For those who do not carry HIV, the test is 92.6% accurate. If an individual from Swaziland has tested positive, what is the probability that he carries HIV? Create a tree diagram to calculate the probability.

**Question 1:** If an individual from Swaziland has tested positive, what is the probability that he carries HIV?

P(+ | HIV)=0.997

Have HIV

(0.259) P(- | HIV)=0.003

Swaziland

P(+ | no HIV)=0.074

Don’t have HIV

(0.741) P(- | no HIV)=0.926

The probability that the individual from Swaziland carries HIV is 0.997