

Test for HIV

Note: This exercise goes with Section 6.6 of Finite Mathematics.

A new test for the virus that causes AIDS developed by Octopus Diagnostics Research of Hantsport, Nova Scotia, shows the presence or absence of HIV in a drop of blood in two minutes, compared with five days for a conventional test.* Preliminary results indicate a false positive rate (an indication that the HIV virus is present when it is not) of less than 2%, and a false negative rate (a failure to detect the presence of the HIV virus) of up to 5%. Assume for this exercise that these rates are exactly 2% and 5%. In 1996, there were 780,000 people in North America with the HIV virus, out of a population of 295 million.† Suppose a resident of North America is chosen at random and given this test. If the result is positive, what is the probability that the person actually has the HIV virus?

Answers can be found on the next page.

* *Maclean's*, Feb. 17, 1997, p. 70.

† *The World Almanac and Book of Facts, 1997*.

Answers to **Test for HIV**

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