Ch 5 Activity: Drug Testing Name _____

Objective: Use tree diagrams and two-way tables to calculate conditional probabilities.

Scenario: Many employers require prospective employees to take a drug test. A positive result on this test indicates that the prospective employee uses illegal drugs. However, not all people who test positive actually use drugs. Suppose that 4% of prospective employees use drugs, the false positive rate is 5%, and the false negative rate is 10%.

1. Draw a tree diagram to summarize this situation.

2. What percent of people who test positive actually use illegal drugs? State this as a conditional probability and show your work.

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3. What percent of people who test positive don't use illegal drugs? Show your work.

4. Suppose there are 1,000 prospective employees tested. Create a two-way table summarizing this situation.

	Took Drugs?		
Positive Test?	**Yes**	**No**	**Total**
Yes			
No			
Total			1,000

5. Calculate P(took drugs | positive test) and compare this to your answer to question 2.