Shaw and colleagues* have reported on $\text{A}^\text{B}_{1\text{to}42}$ for the detection of mild Alzheimer's disease (AD). Data describing the results of this test in a sample of 56 autopsy-confirmed people with AD and 52 cognitively normal (NC) people are reported in the Figure on the next page.

1. Calculate stratum specific likelihood ratios for $\text{A}^\text{B}_{1\text{to}42}$ readings of $<130$, $\geq 130$ to $<185$, and $\geq 185$. Note: the strata are defined by the solid vertical lines, NOT the dashed vertical line. See bottom of figure for information about observations that appear to touch the lines or that overlap each other. Assume that the 52nd normal observation lies in the lower right corner of the figure ($\text{A}^\text{B}_{1\text{to}42} >200$ and Tau $<90$).

2. Suppose your pre-test probability is 3% and your ratio of the cost of false positive to false negative mistakes is 1 to 4. If the test result for this patient is between 130 and 185, what is your post-test probability of disease? On which side of the treatment threshold does your post-test probability fall, treatment or no treatment?

3. Which results should be classified as positive and which as negative tests?

4. If the test result for a patient with a 10% pre-test probability is between 130 and 185, what is your post-test probability of disease? On which side of the treatment threshold does your post-test probability fall, treatment or no treatment?

5. Would your classification of positive and negative test results vary for a patient with a pre-test probability of 10%? If so, in what way?

Please show your work; report SSLR and probabilities to 3 decimal places.