Here's a response structured for a graduate-level statistics exam:

\*\*(a) Estimating Medians from Histograms:\*\*

To estimate the median P-T ratio for each group (West and East), we will use the histograms' frequencies to determine the cumulative frequency. The median is the value separating the lower 50% from the upper 50% of the data. Since we have histograms and not raw data, we'll approximate.

\*\*West:\*\* The West group has 24 states. The median will be between the 12th and 13th observations. Examining the histogram, we accumulate frequencies: approximately 1 observation in the 10-12 bin, 4 in the 12-14 bin, so 5 observations by the end of 12-14. The next bin (14-16) has 6 observations, bringing the cumulative total to 11. The 12th and 13th observations thus fall within the 14-16 bin. Therefore, we estimate the median P-T ratio for the West group to be approximately 15.

\*\*East:\*\* The East group has 26 states. The median will be between the 13th and 14th observations. Inspecting the histogram, we have approximately 2 observations in 10-12, 3 in 12-14. This brings our cumulative frequency to 5. Then we add 4 from the 14-16 bin (cumulative 9) and another 5 from 16-18 (cumulative 14). The 13th and 14th observation lies in the 16-18 bin. We estimate the median P-T ratio for the East group to be approximately 17.

\*\*(b) Comparing Distributions:\*\*

The distribution of P-T ratios for the West group appears to be roughly unimodal and somewhat left-skewed, whereas the distribution for the East group is also unimodal but more strongly right-skewed. The West group shows a wider range of ratios, extending to lower values, while the East group is more concentrated around a higher average ratio. The modal P-T ratio is slightly higher for the East group than for the West group.

\*\*(c) Comparing Mean P-T Ratios:\*\*

Given the medians and the shapes of the distributions, we can infer that the mean P-T ratio will likely be higher for the East group than for the West group. This is because the East group's distribution is right-skewed, indicating the presence of values significantly higher than the median that will pull the mean upward. The left-skew in the West distribution is less pronounced, hence the mean is expected to be closer to the median. Therefore, while both means will likely be above their respective medians, the higher concentration of higher ratios in the East group will translate into a higher mean. This result must, however, be qualified as being based on an approximation of the mean from the histograms, which do not directly contain all the required information.