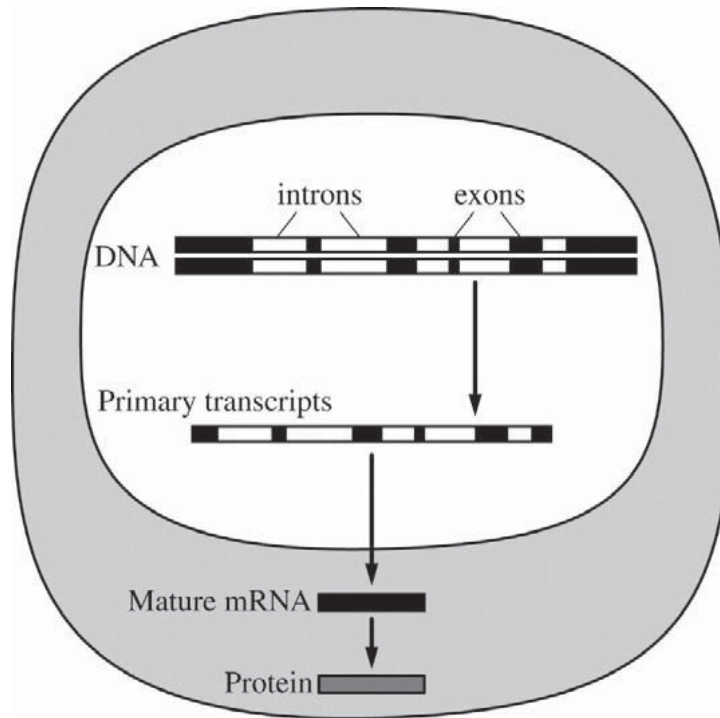




4. The figure represents the process of expression of gene X in a eukaryotic cell.
- (a) The primary transcript in the figure is 15 kilobases (kb) long, but the mature mRNA is 7 kb in length. **Describe** the modification that most likely resulted in the 8 kb difference in length of the mature mRNA molecule. **Identify** in your response the location in the cell where the change occurs.
- (b) **Predict** the length of the mature gene X mRNA if the full-length gene is introduced and expressed in prokaryotic cells. **Justify** your prediction.