1. When 2-bromo-2-methylbutane is reacted with either sodium methoxide or boiling methanol, the same product 2-methylbut-2-ene is obtained (in addition to other products).

Knowing the difference in mechanisms for these two reactions, what other products are expected in each case?

Which reaction would you expect to give a higher yield of 2-methylbut-2-ene?

2. When R-2-bromobutane is reacted with sodium methoxide, a variety of products can result.

Draw the expected products.

If sodium thiomethoxide is reacted instead of sodium methoxide, how will the rates of each product change? Which will occur with a faster rate and which will occur with a slower rate? Explain your reasoning.

Which product is preferred for both sodium methoxide and sodium thiomethoxide?

3. Draw a Newman projection for the preferred product when (2S,3R)-2-bromo-3-methylpentane is reacted under the following conditions.