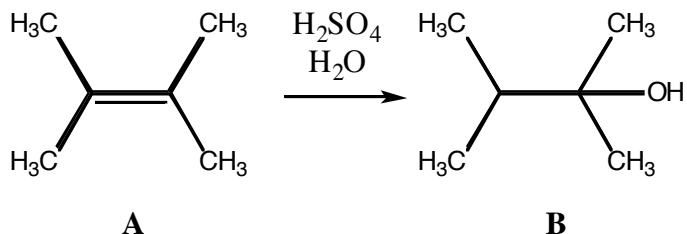
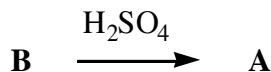


Problem 67, Chemistry 301X - 2006

(a) When **A** is treated with a solution of dilute aqueous acid, **B** is formed. Write a careful mechanism for this transformation and clearly identify any intermediates. What general reaction type does this transformation represent?



(b) When **B** is treated with *concentrated* acid, **A** is formed. Write a careful mechanism for this transformation and clearly identify any intermediates. What general reaction type does this transformation represent?



(c) What is the relationship between the mechanisms you drew for parts (a) and (b)? What does this say about the relationship between these two general reaction types?

(d) There is a significant by-product in the reaction from part (b) whose molecular weight is twice that of **A**. What is the mechanism for the formation of this product? Why don't you see this by-product in part (a)?