## **CONCEPT:** ALCOHOL REACTIONS: OXIDATION REACTIONS

- The oxidizing agent of \_\_\_\_\_ dissolved in sulfuric acid reacts with an alcohol.
  - □ **Oxidizing Agent:** the compound used to \_\_\_\_\_ alcohols.
    - It adds as many \_\_\_\_\_ bonds as possible without breaking any C–C bonds.

**EXAMPLE**: Determine the product created under the following oxidation reaction.

$$\begin{array}{c} \text{CH}_3\text{CH}_2\text{CH}_2\text{OH} & \xrightarrow{\text{K}_2\text{Cr}_2\text{O}_7} \\ & \xrightarrow{\text{H}_2\text{SO}_4} \end{array}$$

**PRACTICE**: Determine the product created under the following oxidation reaction.

$$\begin{array}{c} \text{OH} \\ \mid \\ \text{CH}_3\text{CH}_2\text{CHCH}_2\text{CH}_3 \end{array} \xrightarrow{ \begin{array}{c} \text{K}_2\text{Cr}_2\text{O}_7 \\ \\ \text{H}_2\text{SO}_4 \end{array}} \xrightarrow{ \begin{array}{c} \text{K}_2\text{Cr}_2\text{O}_7 \\ \\ \text{H}_2\text{SO}_4 \end{array}}$$

**PRACTICE:** Which of the following alcohols cannot undergo an oxidation reaction?

a) 2-butanol

- b) 3-heptanol c) 2-methyl-2-propanol
- d) 1-propanol