DEHYDRATION SYNTHESIS

In the following two examples of dehydration synthesis, show how the removal of the water molecule(s) takes place by drawing a ring around the components of water. Then, draw the structural formula of each product.

Synthesis of a Fat

1 glycerol molecule + 3 fatty acid molecules → 1 fat molecule + 3 water molecules

Formation of a Peptide Bond

amino acid + amino acid → dipeptide + water
HYDROLYSIS

Hydrolysis is the opposite of a dehydration synthesis. A large molecule is broken down into two or more smaller molecules by the addition of water.

Draw the structural formulas of the expected products in the two following hydrolysis reactions.

**Breakdown of a Disaccharide to Monosaccharides**

![Disaccharide](image)

**2 monosaccharides**

**Breakdown of a Lipid**

![Lipid](image)

lipid + 3 water molecules \( \xrightarrow{lipase} \) glycerol \( \xrightarrow{lipase} \) 3 fatty acids