Provide synthetic routes to the following compounds. All reagents and intermediates should be indicated.

a) \[ \text{[chemical structure]} \rightarrow \text{[chemical structure]} \]

Note: The "\(\rightarrow\)" symbol indicates that more than one step is required.

b) \[ \text{[chemical structure]} \rightarrow \text{[chemical structure]} \]

Note: A squiggly line indicates that both stereochemical configurations are present.

c) \[ \text{[chemical structure]} \rightarrow \text{[chemical structure]} + \text{enantiomer} \]

d) \[ \text{[chemical structure]} \rightarrow \text{[chemical structure]} \]

e) \[ \text{[chemical structure]} \rightarrow \text{[chemical structure]} \]

* make sure you think about each functional group in the molecule when you perform each step.