Multi-Step Synthesis Problems 1

For each compound shown below, using compounds of four carbons or fewer:
(a) diagram a retrosynthetic analysis (work backwards)
(b) provide a detailed (reagents, etc.) pathway in the synthetic (forward direction)

1) 

2) note: selective reactions (hoping then only one alkene will react when 2 are present) are often difficult

3) 

4) 

5) 

6) 

7) 

\[ \text{Diagram for each compound} \]