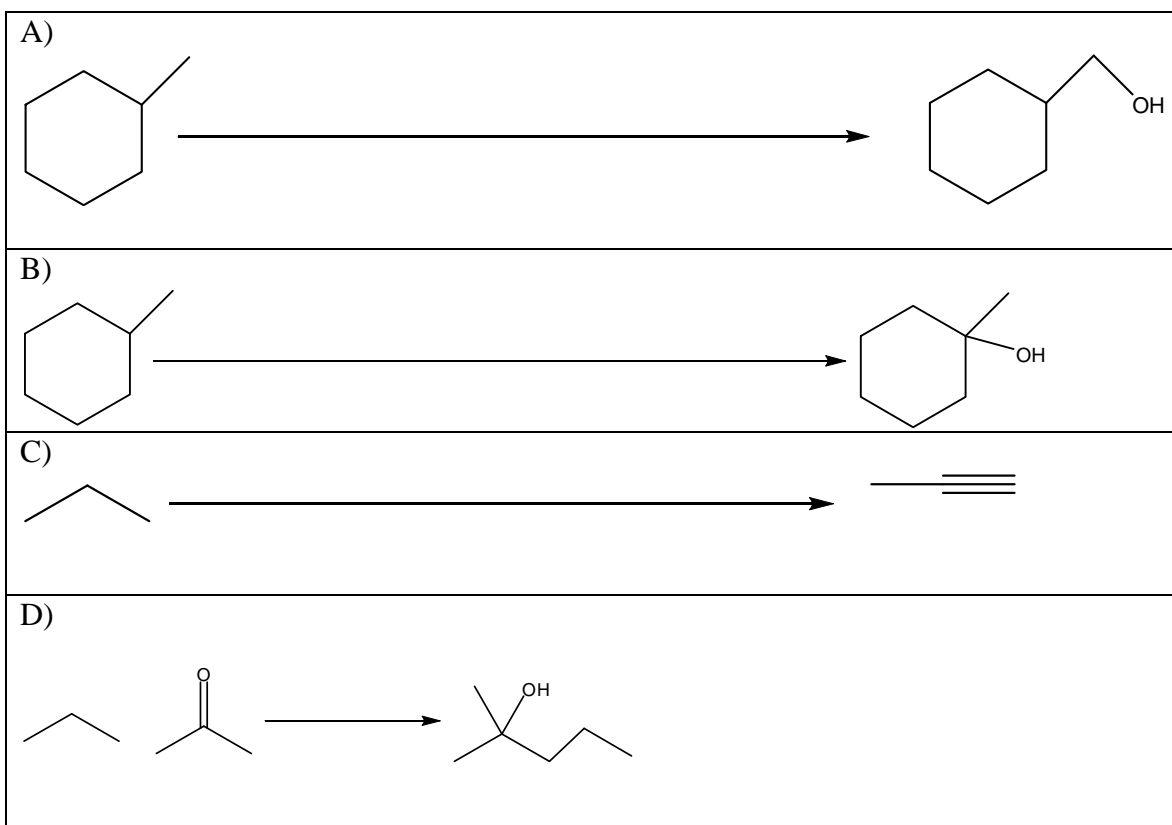


1. Show how each of the following compounds might be synthesized starting from 2-bromobutane.

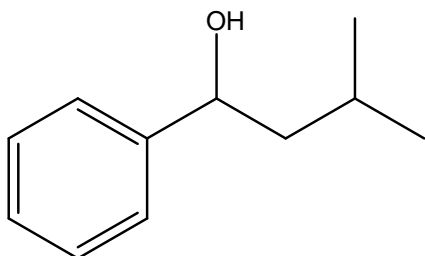
(a) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$	(b) 1-bromobutane	(c) Butane
(d) 1-butyne	(e) 2-butyne	(f) $\text{CH}_3\text{COCH}_2\text{CH}_3$

2. Synthesis: Propose a synthetic pathway for the following conversions. More than one step will be necessary.

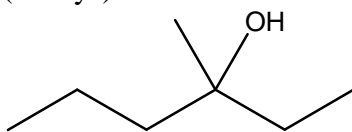


3. Show how you would make each of the following (racemic) alcohols by the addition of a Grignard reagent to a ketone or aldehyde.

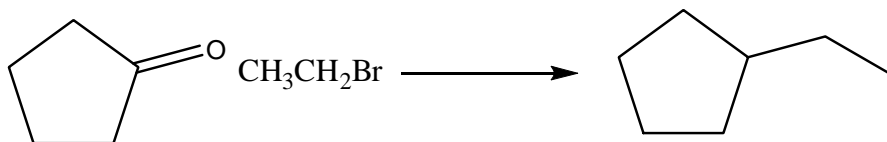
(2 ways)



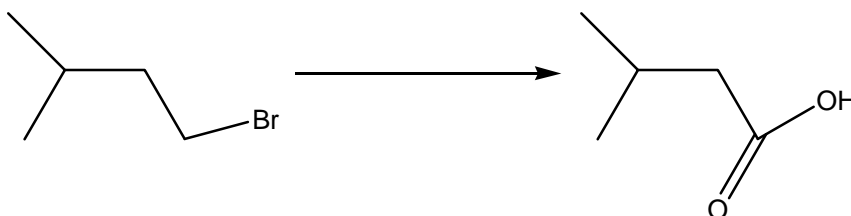
(3 ways)



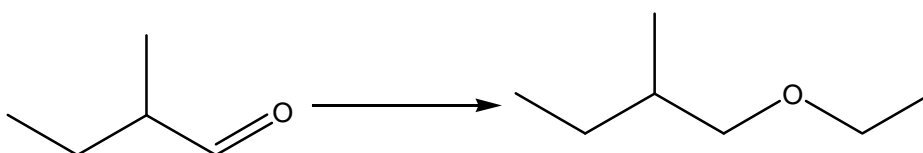
4. Suggest a short sequence of reactions to carry out the following synthesis.



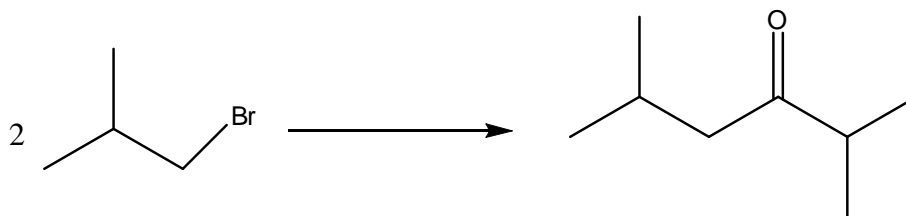
5. Suggest a sequence of reactions to carry out the following synthesis.



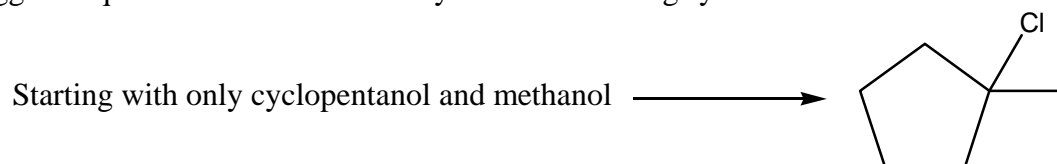
6. Suggest a sequence of reactions to carry out the following synthesis. You may use other sources of carbon for this synthesis.



7. Suggest sequence of reactions to carry out the following synthesis.



8. Suggest sequence of reactions to carry out the following synthesis.



9. Suggest sequence of reactions to carry out the following synthesis.

