

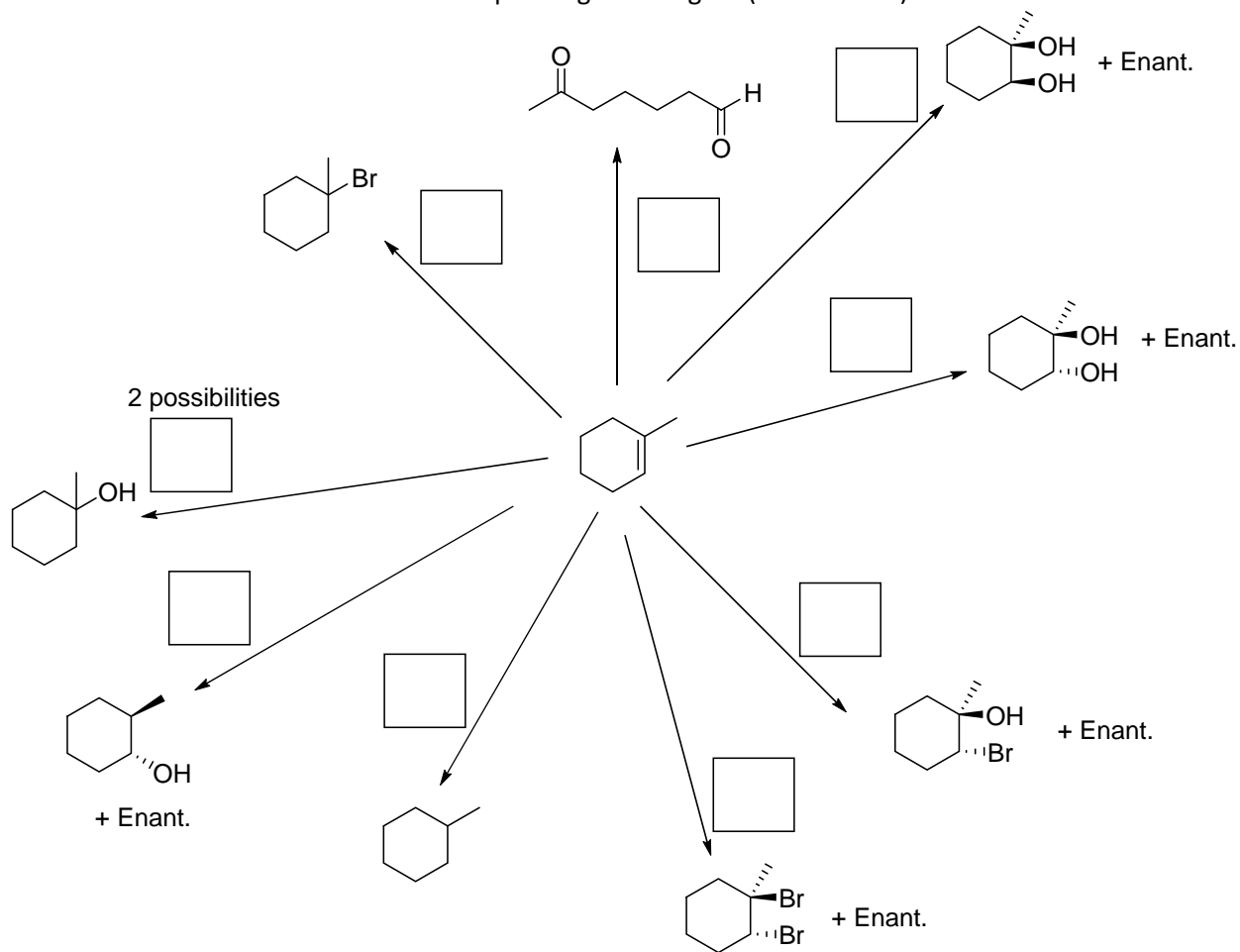
## Synthesis: Putting it all together

### Reaction Medley: Review of reagents

Use the table for problems below.

<b>(A)</b> HBr	<b>(B)</b> Na, NH <sub>3</sub> (liquid)	<b>(C)</b> 1 mol HCl	<b>(D)</b> 2 mol HCl
<b>(E)</b> 1) Hg(OAc) <sub>2</sub> , H <sub>2</sub> O 2) NaBH <sub>4</sub>	<b>(F)</b> KMnO <sub>4</sub> , NaOH (cold)	<b>(G)</b> H <sub>2</sub> , Pd/C or H <sub>2</sub> , Pt/C or H <sub>2</sub> , Ni	<b>(H)</b> 2 mol Br <sub>2</sub> (in CH <sub>2</sub> Cl <sub>2</sub> solvent)
<b>(I)</b> 1) OsO <sub>4</sub> 2) NaHSO <sub>3</sub> , H <sub>2</sub> O	<b>(J)</b> 1) O <sub>3</sub> , -78 C 2) DMS (required!!) (DMS = dimethylsulfide) <b>(compare K)</b>	<b>(K)</b> 1) O <sub>3</sub> , -78 C 2) H <sub>2</sub> O (no DMS required) dimethylsulfide	<b>(L)</b> 1 mol Br <sub>2</sub> (in CH <sub>2</sub> Cl <sub>2</sub> solvent)
<b>(M)</b> 1) BH <sub>3</sub> , THF 2) HO <sup>⊖</sup> , H <sub>2</sub> O <sub>2</sub> , H <sub>2</sub> O	<b>(N)</b> CHCl <sub>3</sub> , KOH (base)	<b>(O)</b> 1) XS moles NaNH <sub>2</sub> 2) H <sub>2</sub> O	<b>(P)</b> 1 mol NaNH <sub>2</sub>
<b>(Q)</b> HIO <sub>4</sub>	<b>(R)</b> MnO <sub>2</sub> (in THF solvent)	<b>(S)</b> 1) HgSO <sub>4</sub> , H <sub>2</sub> O, H <sub>2</sub> SO <sub>4</sub> ,	<b>(T)</b> H <sub>3</sub> O <sup>⊕</sup> (23 °C) <b>(mild addition cond'ns)</b>
<b>(U)</b> <i>m</i> -chloroperoxybenzoic acid ( <i>m</i> CPBA)	<b>(V)</b> CH <sub>2</sub> I <sub>2</sub> , Zn(Cu)	<b>(W)</b> CH <sub>3</sub> Br	<b>(X)</b> NBS, <i>hν</i> <i>N</i> -bromosuccinimide
<b>(Y)</b> 1) <i>m</i> -chloroperoxybenzoic acid ( <i>m</i> CPBA) 2) H <sub>3</sub> O <sup>⊕</sup>	<b>(Z)</b> HBr, ROOR (peroxides)	<b>(AA)</b> ( <i>t</i> -BuOK)  OR   <b>DBU</b> OR   <b>DBN</b>	<b>(BB)</b> 1 mol Cl <sub>2</sub> (in CH <sub>2</sub> Cl <sub>2</sub> solvent)
<b>(CC)</b> 1) BH <sub>3</sub> , THF 2) HO <sup>⊖</sup> , H <sub>2</sub> O <sub>2</sub> , H <sub>2</sub> O	<b>(DD)</b> CHCl <sub>3</sub> , KOH (base)	<b>(EE)</b> NaNH <sub>2</sub> (in NH <sub>3</sub> solvent)	<b>(FF)</b> Cl <sub>2</sub> (in CH <sub>2</sub> Cl <sub>2</sub> solvent)
<b>(GG)</b> (NaOCH <sub>3</sub> )  OR (NaOEt)	<b>(HH)</b> Br <sub>2</sub> , excess CH <sub>3</sub> OH	<b>(II)</b> H <sub>2</sub> O	<b>(JJ)</b> H <sub>2</sub> , Lindlar catalyst
<b>(KK)</b> 2 mol Cl <sub>2</sub> (in CH <sub>2</sub> Cl <sub>2</sub> solvent)	<b>(LL)</b> 1) disiamylborane 2) HO <sup>⊖</sup> , H <sub>2</sub> O <sub>2</sub> , H <sub>2</sub> O	<b>(MM)</b> H <sub>2</sub> O, conc. H <sub>2</sub> SO <sub>4</sub> , Heat	<b>(NN)</b> Br <sub>2</sub> , excess H <sub>2</sub> O
<b>(OO)</b> Br <sub>2</sub> , <i>hν</i> (light)	<b>(PP)</b> Tosyl Cl (TsCl), pyridine		

Fill in the **small boxes** with a letter corresponding to a reagent (Table above)

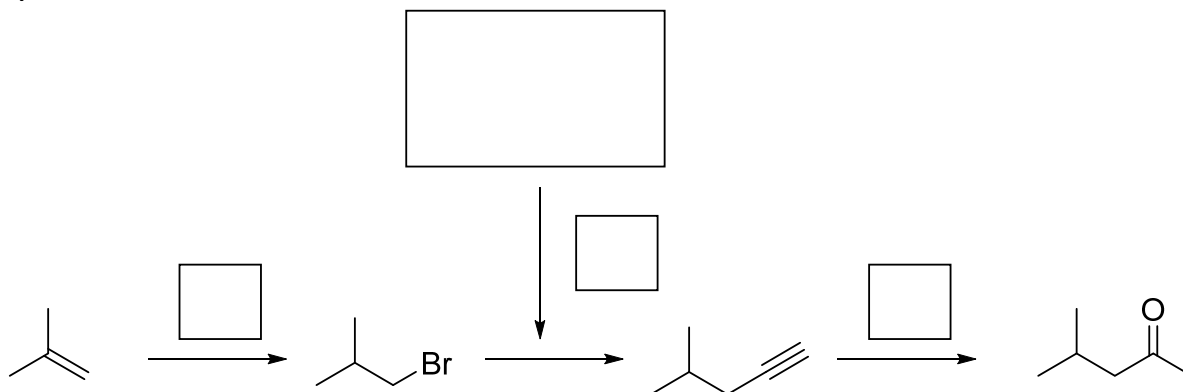




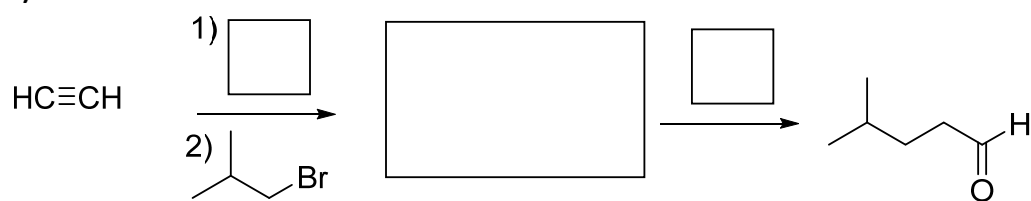
Fill in the **small boxes** with a letter corresponding to a reagent (Table above)

Fill in the **larger rectangles** with organic reactant

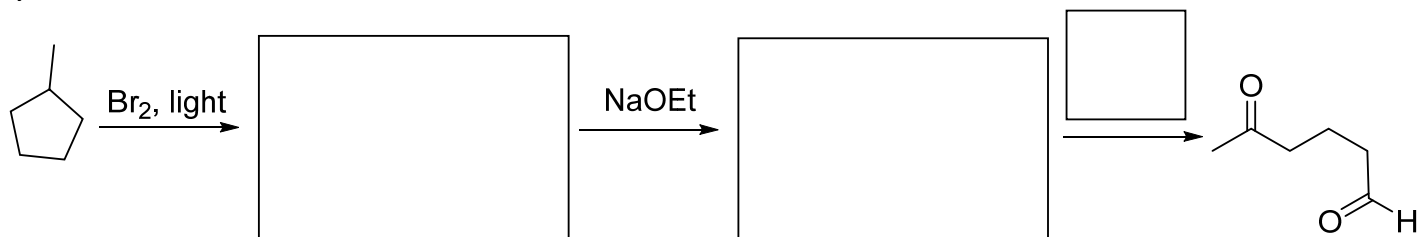
a)

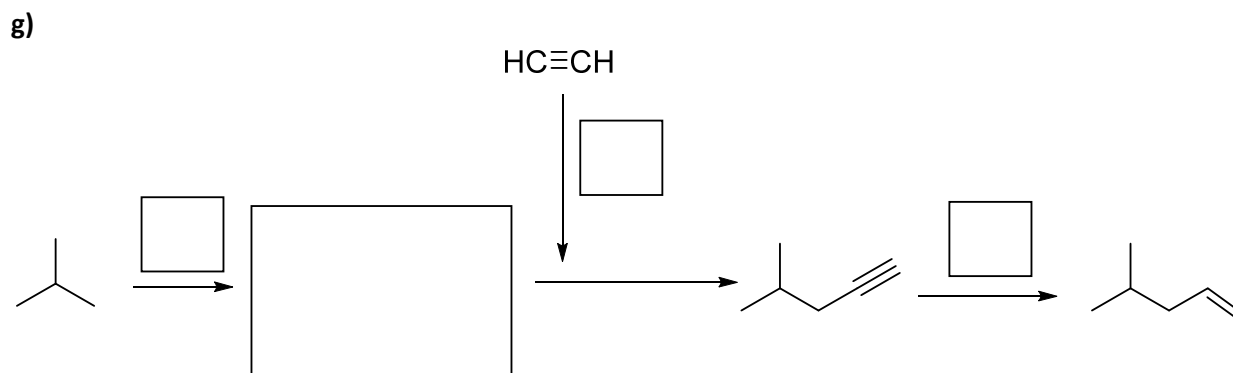
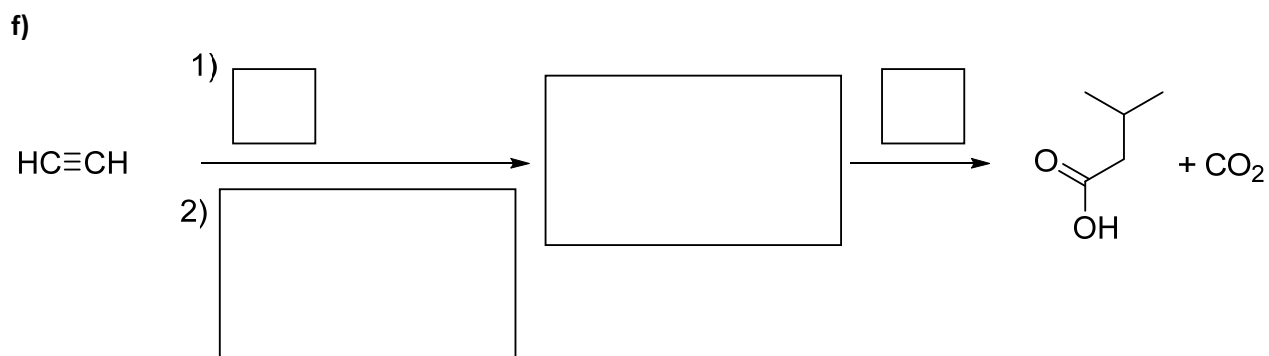
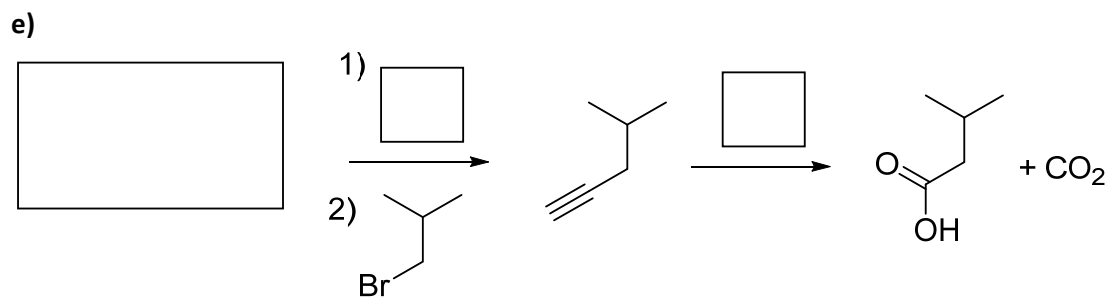
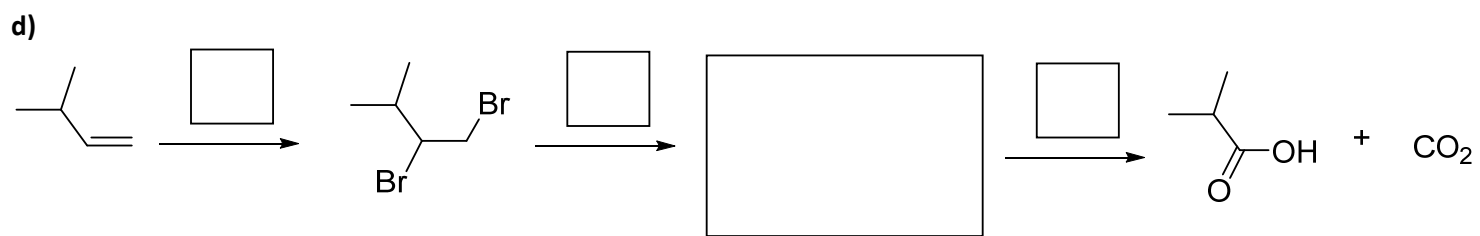


b)

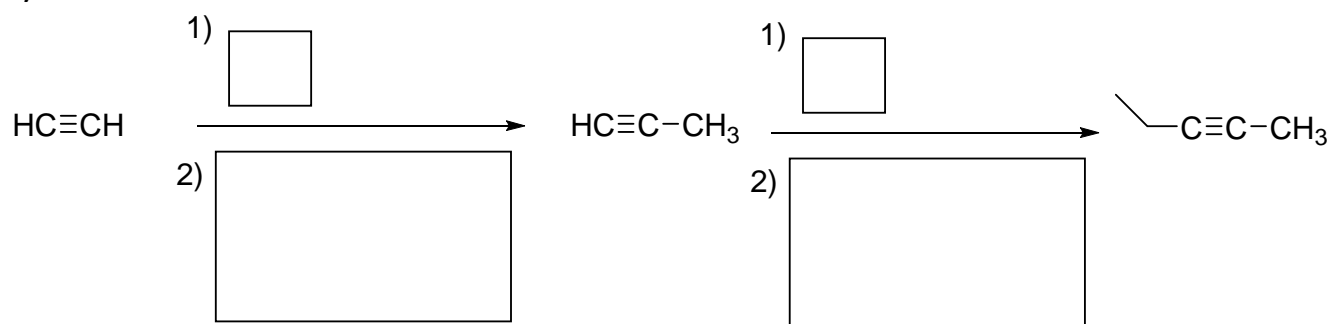


c)

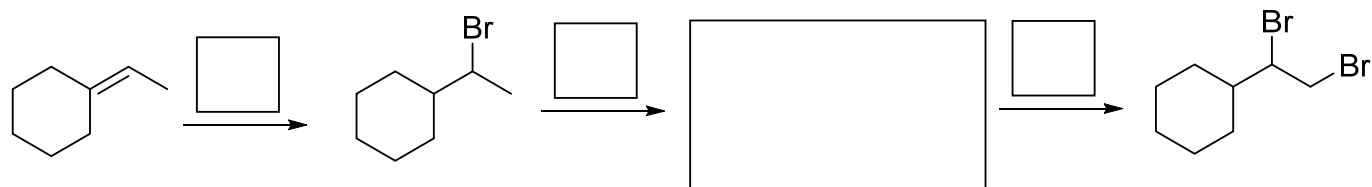




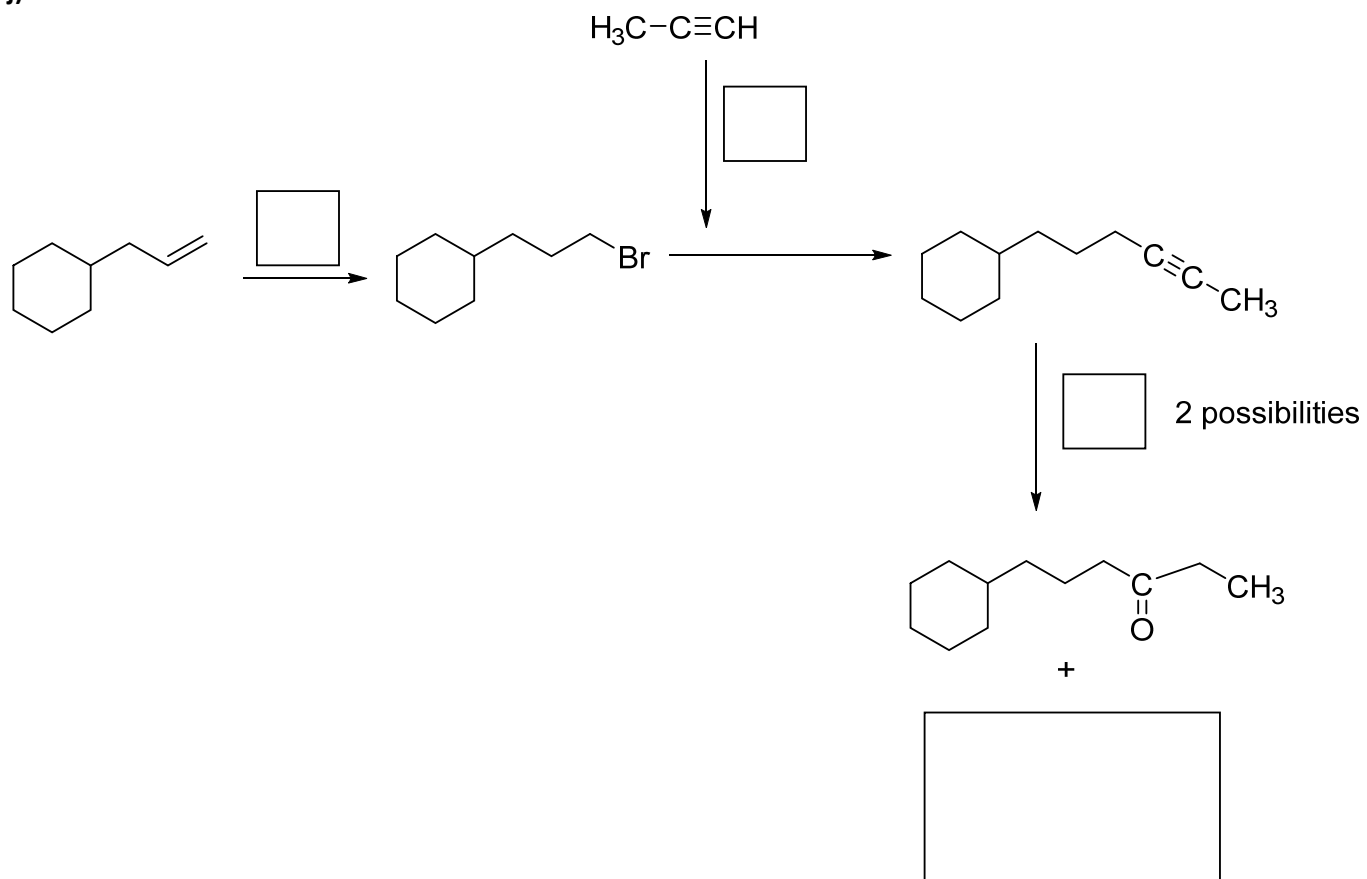
h)



i)



j)



k)

