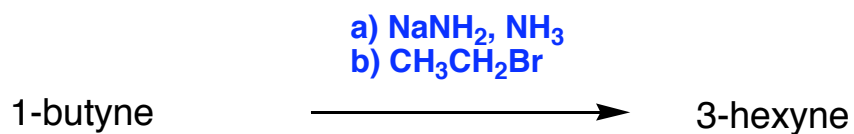
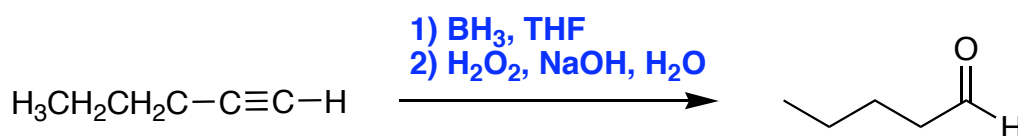
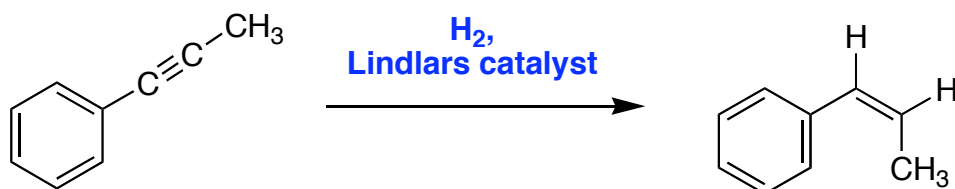
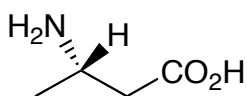


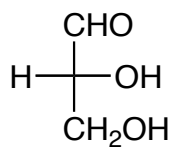
1. Provide all necessary reagents for the following reactions. (9 pts)



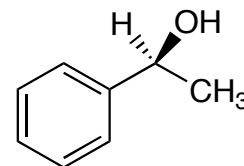
2. Assign the stereochemistry of the following: (6 pts)



S

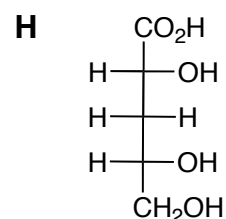
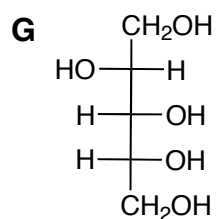
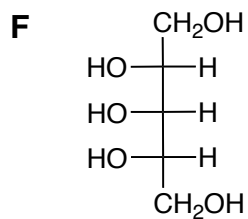
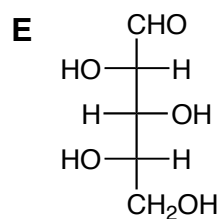
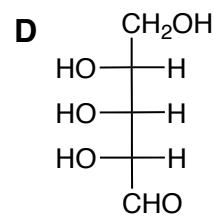
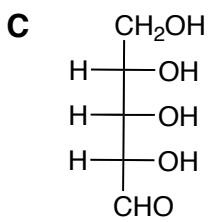
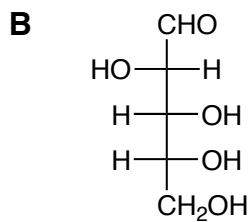
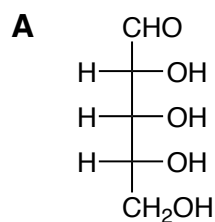


R



S

3. Carefully examine the Fischer projections A-H and answer the following questions (give only one answer for each question, 10 pts)



Which Fischer projection (**B-H**) is the enantiomer of A?

_____ **C** _____

Which Fischer projection (**B-H**) is identical to A?

_____ **D** _____

Which Fischer projection (**B-H**) is a diastereomers of A?

_____ **B or H** _____

Which Fischer Projection (**B-H**) is a constitutional isomer of A?

_____ **H** _____

Which Fischer Projection (**A-H**) is meso?

_____ **F** _____

Problem 1 (9 pts) _____

2 (6 pts) _____

3 (10 pts) _____

Total (out of 25) _____