

Chem 108A Alkene Reaction worksheet - Chapter 8

1. Predict the product(s) of the reaction of **2-butene** with reagents **(a)** through **(q)**.

(a) HBr, Ether

(b) Cl₂, CH₂Cl₂

(c) 1. O₃; 2. Zn, H₃O⁺

(d) I₂, H₂O

(e) 1. BH₃, THF; 2. H₂O₂, NaOH

(f)* 1. Hg(OAc)₂, THF/H₂O; 2. NaBH₄

* Alternate reagents to "H₂O, H₂SO₄ (cat.)"

(g)** 1. OsO₄; 2. NaHSO₃, H₂O

(h) H₂, Pd/C

** Alternate reagents to "OsO₄, NMO"

(i) RCO₃H (mCPBA)

(j) KMnO₄, H₃O⁺

(k) reagent **(i)** then H₃O⁺

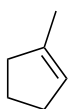
(l) reagent **(g)** then HIO₄, H₂O

Repeat the same reactions (reagents **a-m**) for the following compounds, indicating *relative stereochemistry* where appropriate.

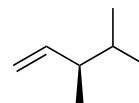
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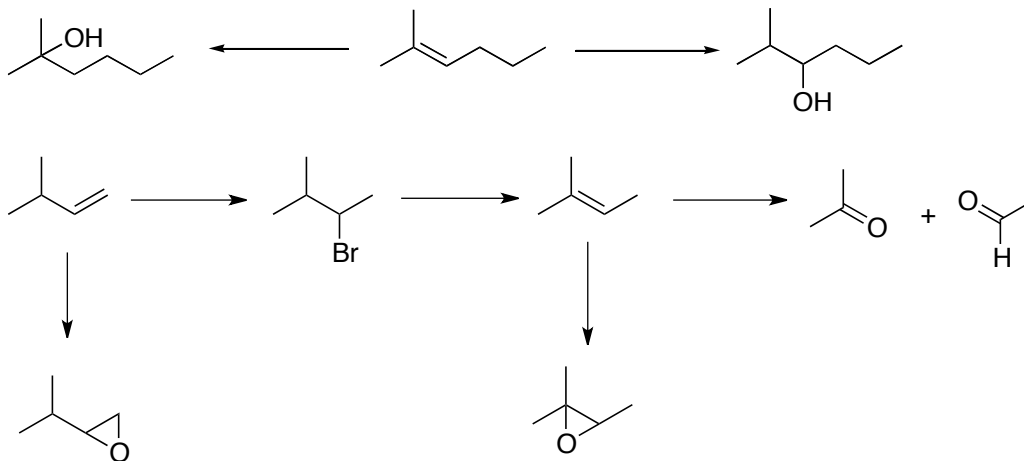
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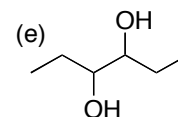
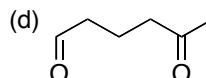
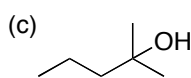
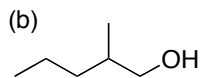
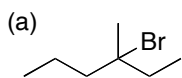
4.



5. Fill in the missing reagents over the arrows



6. Draw the possible alkene(s) and reagents needed to synthesize the following compounds.



1a	2a	3a	4a
1b	2b	3b	4b
1c	2c	3c	4c
1d	2d	3d	4d
1e	2e	3e	4e
1f	2f	3f	4f
1g	2g	3g	4g
1h	2h	3h	4h
1i	2i	3i	4i
1j	2j	3j	4j
1k	2k	3k	4k
1l	2l	3l	4l