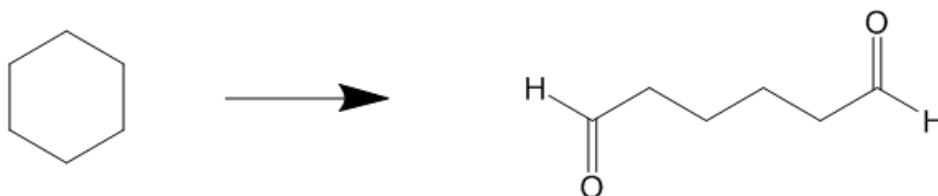


Problems discussed in the videos:

Videos (1) – (3)

Question 9.47

Show how to accomplish the following conversion using reagents from the table.



When only one enantiomer is shown, it is to indicate **relative stereochemistry**. Reactants and/or products are racemic.

A: $(\text{CH}_3)_3\text{CO}^-\text{K}^+$	B: $\text{OsO}_4, \text{H}_2\text{O}_2$	C: HCl	D: peracid, CH_2Cl_2
E: HBr	F: $\text{Br}_2, \text{CCl}_4$	G: 1. BH_3 2. $\text{H}_2\text{O}_2, \text{NaOH}$	H: HIO_4
I: $\text{H}_2\text{O}/\text{H}_2\text{SO}_4$	J: Br_2, heat	K: 1. O_3 , 2. $(\text{CH}_3)_2\text{S}$	L: NaCl

Videos (4) – (5)

Question 8.28

Choose a reagent from the list to bring about the following conversion:



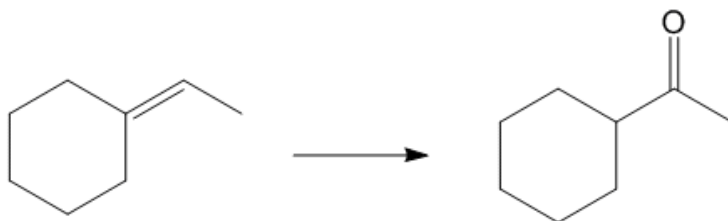
A) NBS, CH_2Cl_2 , light	B) FeBr_3 , THF	C) HBr , dark
D) NaBr , acetone	E) Br_2 , CH_2Cl_2	F) BrCH_2CH_3
G) BBr_3	H) NaCl , NaBr , H_2O	I) HBr , peroxides

CHECK ANSWER

Videos (6) – (7)

Question 10.35

Devise a route to carry out the following conversion:



Specify, in order, the reagents you would use to carry it out.

The reaction may require more than one step. If there is more than one feasible route, show only one.

Specify reagents using letters from the table, first reagent on the left.

Example: ab

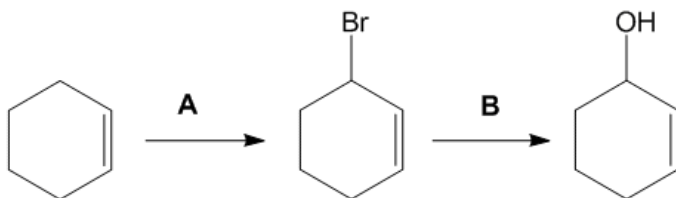
a SOCl ₂ , pyridine	e NaNH ₂ / NH ₃	i 1. NaNH ₂ / NH ₃ 2. H ₂ O
b H ₃ PO ₄ , heat	f H ₂ CrO ₄	j CH ₃ I
c H ₂ O, H ₂ SO ₄	g 1. OsO ₄ /H ₂ O ₂ 2. HIO ₄	k OsO ₄ /H ₂ O ₂
d PCC	h H ₂ / Lindlar catalyst	l 1. BH ₃ 2. H ₂ O ₂ , NaOH

The reagents are (in order of use):

Videos (8) – (9)

Question 10.45

Using the reagents listed in the table below, devise routes for the following transformations:



Specify the reagents you would use to carry them out.
If there is more than one feasible route, show only one.

Specify reagents using letters from the table.

Example: a

a NBS	e NaNH ₂ / NH ₃	i H ₂ O
b H ₃ PO ₄ , heat	f H ₂ CrO ₄	j CH ₃ OH
c H ₂ O, H ₂ SO ₄	g HIO ₄	k OsO ₄ /H ₂ O ₂
d PCC	h H ₂ / Lindlar catalyst	l 1. BH ₃ 2. H ₂ O ₂ , NaOH

The reagents are (in order of use):

for step A:

for step B:

Videos (10) – (12)

Question 7.8

The following synthesis requires more than one step. Specify the reagents you would use to carry it out.

Specify reagents using letters from the table, first reagent on the left.

Example: ab



Notice that there are two possibilities given: NaNH_2 and NaNH_2 in combination with water.

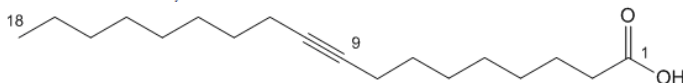
a Br_2	e $\text{NaNH}_2 / \text{NH}_3$	i 1. $\text{NaNH}_2 / \text{NH}_3$ 2. H_2O
b D_2O	f CH_3I	j NaBH_4
c H_2O	g $\text{CH}_3\text{CH}_2\text{I}$	k KOH (ethanol)
d $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$	h $\text{H}_2 / \text{Lindlar catalyst}$	l 1. BH_3 2. $\text{H}_2\text{O}_2, \text{NaOH}$

The reagents are (in order of use):

Video (13)

Question 7.14

Show how to convert 9-octadecynoic acid



to (Z)-9-Octadecenoic acid (oleic acid). Choose the reagents you would use to carry out the reaction from the following table. The reaction may require more than one step. If two or more of conversion to the same product are possible, show only one of them.

Specify reagents using letters from the table, first reagent on the left.

Example: ab

a $\text{Br}_2 / \text{CH}_3\text{COOH}, \text{LiBr}$	e 2 mol Br_2	i $\text{NaNH}_2 / \text{NH}_3$
b 1.) 2 mol $\text{Na} / \text{NH}_3 (l)$ 2.) HCl	f H_2 / Ni	j NaBH_4
c 2 mol H_2O	g 2 mol H_2 / Ni	k KOH (ethanol)
d $\text{OsO}_4 / \text{H}_2\text{O}_2$	h $\text{H}_2 / \text{Pd} / \text{CaCO}_3$ (Lindlar catalyst)	l 1.) BH_3 2.) $\text{H}_2\text{O}_2, \text{NaOH}$

The reagents are (in order of use):