Last Name	ANSWER	First Name	KEY	MI
Student ID Number:				Total Score 35 / 30
Circle the name of your TA: Cari / Phil / Adam / Heather				
Discussion Section – Day:		Time:		

Chem 30A Fall 2004

QUIZ #2 (BLUE)

(15 Min)

Weds Nov 10th

INTERPRETATION OF THE QUESTIONS IS PART OF THE EXAM – DO NOT ASK FOR THE QUESTIONS TO BE EXPLAINED TO YOU

USE CAPITAL LETTERS WHEN FILLING IN THE BOXES AND BE CLEAR – IF WE CAN'T FIGURE OUT WHAT A LETTER IS, IT WILL AUTOMATICALLY BE GRADED AS INCORRECT

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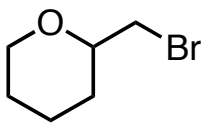
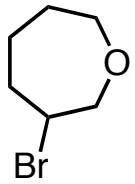
Q	1	2	3	4	5	6	7	8	9	10	Total
X	D	E	B	C	C	E	B	B	E	E	30

ANSWER TO BONUS QUESTION

This one more likely ⇨ 

or 

5

Being eaten by a crocodile is just like going to sleep... in a giant blender – Homer J Simpson

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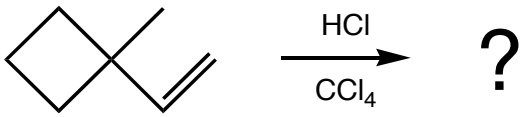
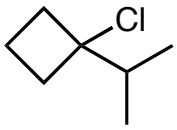
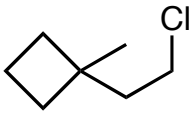
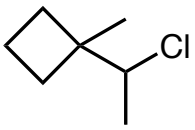
Questions 1–10 are worth **3** points each. The bonus is worth **5** points.

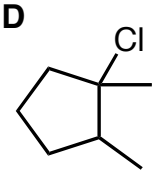
1. What is the MAJOR product of the reaction shown below?

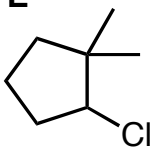


A


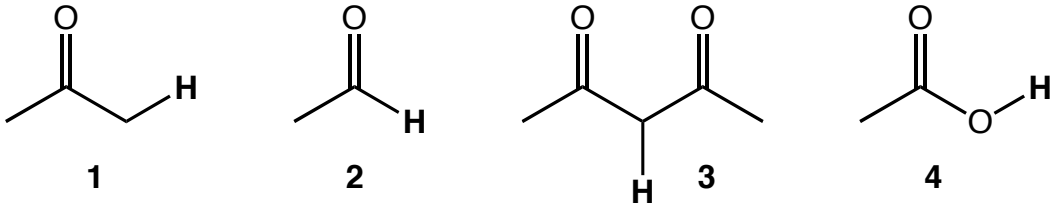
B


C


D


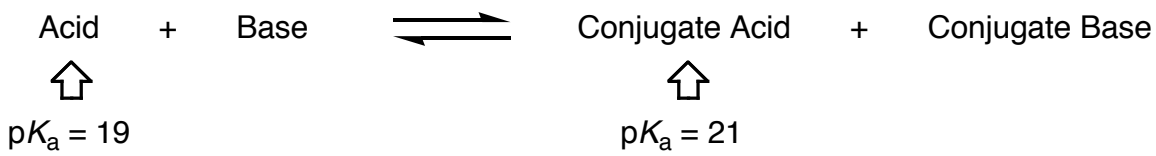
E


2. What is the order of acidity (from lowest pK_a value to highest pK_a value) of the bold hydrogen (**H**) atoms shown highlighted in the compounds drawn below?



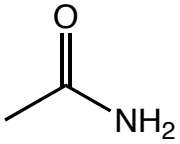
A 3, 4, 2, 1 **B** 4, 2, 1, 3 **C** 3, 1, 4, 2 **D** 2, 4, 3, 1 **E** 4, 3, 1, 2

3. The equilibrium constant (K_{eq}) for the reaction shown below is...?

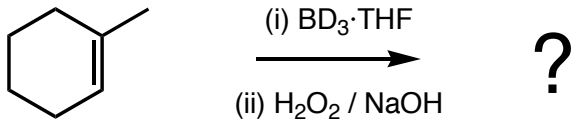


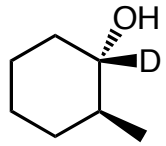
A 2 **B** 100 **C** –2 **D** 0.01 **E** 40

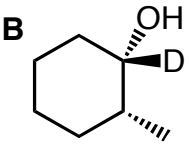
4. Which of the compounds drawn below is the strongest base?

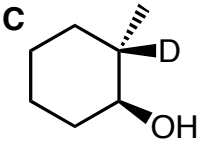
A NH_4Cl **B** NH_3 **C** $NaNH_2$ **D** CH_3NH_2 **E** 

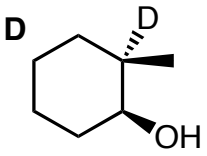
5. Hydroboration/oxidation of 1-methylcyclohexene with deuterated borane·THF (reacts just like BH_3·THF, but has D atoms instead of H) gives which compound?

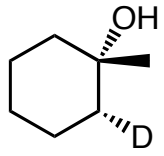


A 

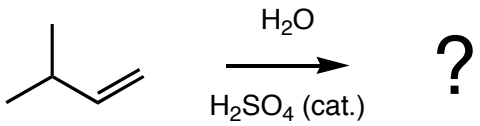
B 

C 

D 

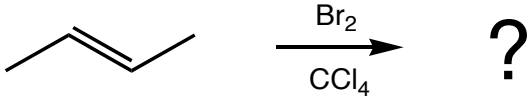
E 

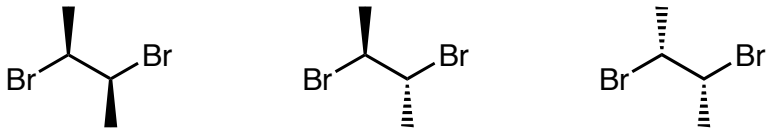
6. What is the MAJOR product of the reaction shown below?



A 2,2-dimethyl-propan-1-ol
B 3-methyl-butan-2-ol
C 3-methyl-butan-1-ol
D 2-methyl-butan-1-ol
E 2-methyl-butan-2-ol

7. The product(s) of the reaction shown below are?

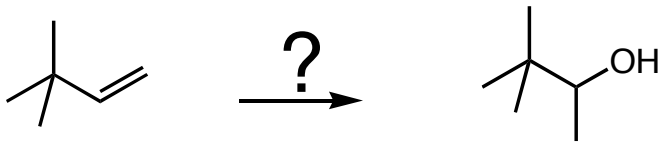




1 **2** **3**

A Only 1 **B** Only 2 **C** Only 3 **D** Only 1 and 3 **E** 1, 2, and 3

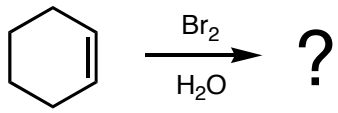
8. Which combination(s) of reagents would give rise to the reaction shown below?

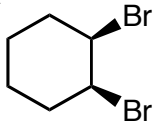


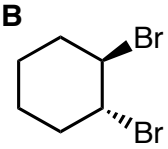
#1 (i) BH_3·THF (ii) H_2O_2 / NaOH **#2** (i) $Hg(OAc)_2/H_2O$ (ii) $NaBH_4$ **#3** H_2O/H_2SO_4(cat.)

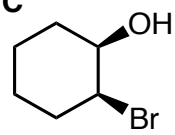
A Only #1 **B** Only #2 **C** Only #3 **D** Only #2 and #3 **E** #1, #2, and #3

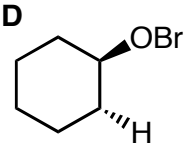
9. What is the MAJOR product of the reaction shown below?

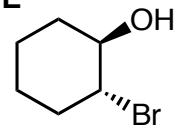


A


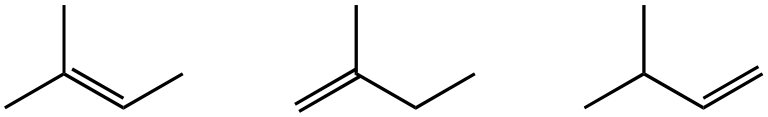
B


C


D


E


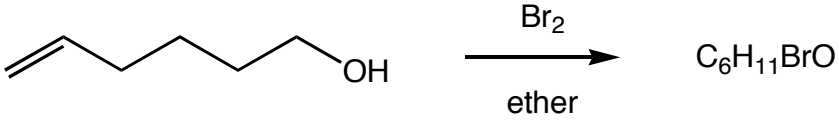
10. Which of the three alkenes drawn below will react with HBr in ether (solvent) to give 2-bromo-2-methylbutane?



1 **2** **3**

A Only 1 **B** Only 2 **C** Only 3 **D** Only 1 and 3 **E** 1, 2, and 3

BONUS: The reaction of 5-hexen-1-ol with bromine in ether (solvent) gives a compound with the molecular formula $C_6H_{11}BrO$. Draw what you think the product of this reaction is ON THE FRONT COVER of this quiz in the box provided.



Last Name	ANSWER	First Name	KEY	MI
Student ID Number:				Total Score 35 / 30
Circle the name of your TA: Cari / Phil / Adam / Heather				
Discussion Section – Day:		Time:		

Chem 30A Fall 2004

QUIZ #2 (PINK)

(15 Min)

Weds Nov 10th

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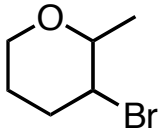
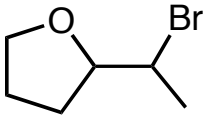
Q	1	2	3	4	5	6	7	8	9	10	Total
X	C	B	E	A	E	D	C	D	B	A	30

ANSWER TO BONUS QUESTION

6-membered ring more stable ⇨ 

or 

5

Being eaten by a crocodile is just like going to sleep... in a giant blender – Homer J Simpson

---

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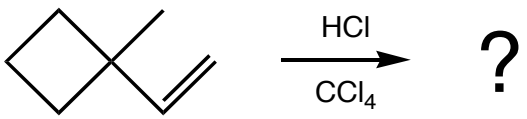
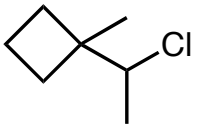
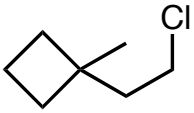
1. What is the MAJOR product of the reaction shown below?



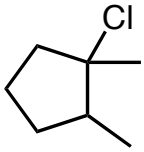
A



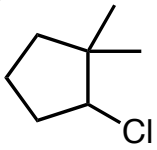
B



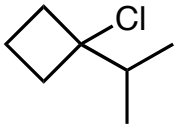
C



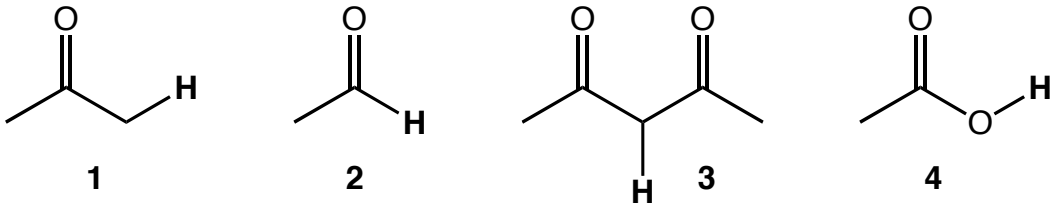
D



E

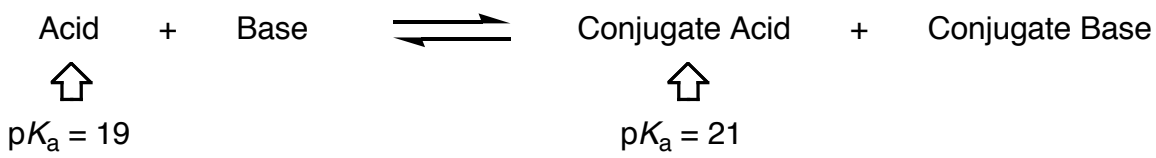


2. What is the order of acidity (from lowest pK_a value to highest pK_a value) of the bold hydrogen (**H**) atoms shown highlighted in the compounds drawn below?



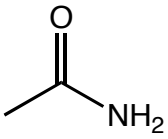
A 2, 4, 3, 1 **B** 4, 3, 1, 2 **C** 3, 1, 4, 2 **D** 3, 4, 2, 1 **E** 4, 2, 1, 3

3. The equilibrium constant (K_{eq}) for the reaction shown below is...?



A –2 **B** 0.01 **C** 2 **D** 40 **E** 100

4. Which of the compounds drawn below is the strongest base?

A $NaNH_2$ **B** CH_3NH_2 **C**  **D** NH_3 **E** NH_4Cl

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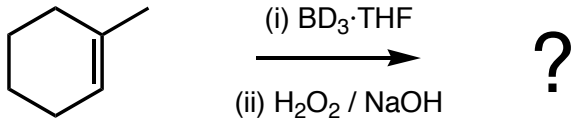
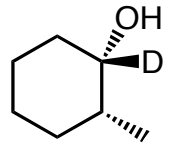
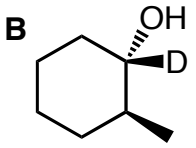
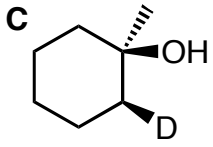
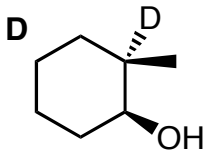
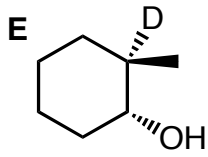
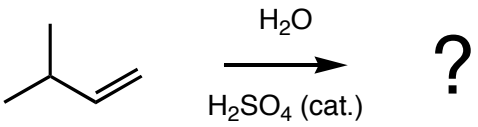


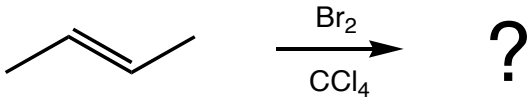
A  **B**  **C**  **D**  **E** 

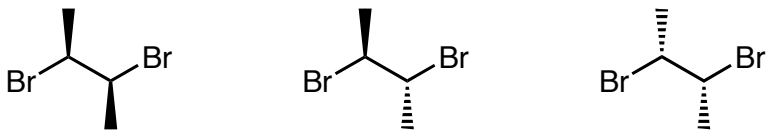
6. What is the MAJOR product of the reaction shown below?



A 2,2-dimethyl-propan-1-ol
B 3-methyl-butan-2-ol
C 3-methyl-butan-1-ol
D 2-methyl-butan-2-ol
E 2-methyl-butan-1-ol

7. The product(s) of the reaction shown below are?

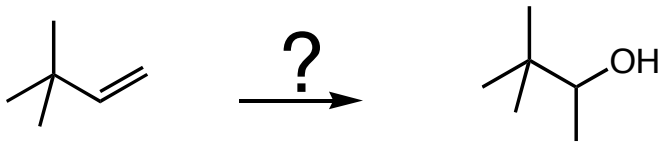




1 **2** **3**

A Only 1 and 3 **B** 1, 2, and 3 **C** Only 2 **D** Only 1 **E** Only 3

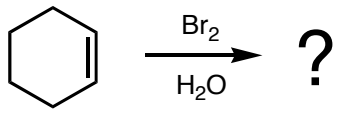
8. Which combination(s) of reagents would give rise to the reaction shown below?

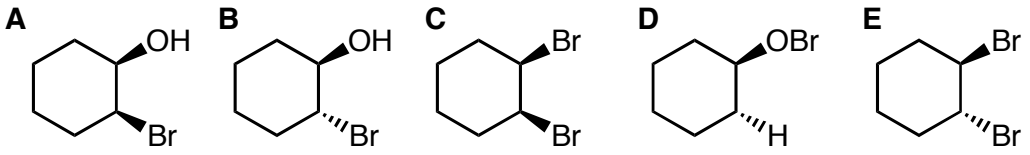


#1 (i) BH_3·THF (ii) H_2O_2 / NaOH **#2** (i) $Hg(OAc)_2/H_2O$ (ii) $NaBH_4$ **#3** H_2O/H_2SO_4(cat.)

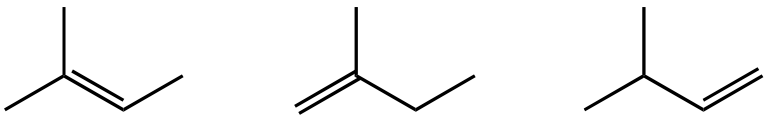
A #1, #2, and #3 **B** Only #2 and #3 **C** Only #1 **D** Only #2 **E** Only #3

9. What is the MAJOR product of the reaction shown below?





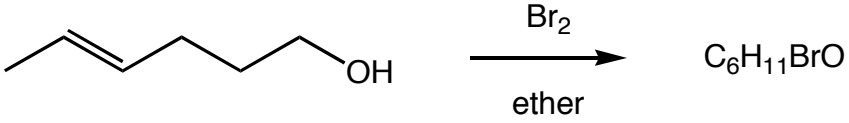
10. Which of the three alkenes drawn below will react with HBr in ether (solvent) to give 2-bromo-2-methylbutane?



1 **2** **3**

A 1, 2, and 3 **B** Only 1 and 3 **C** Only 3 **D** Only 2 **E** Only 1

BONUS: The reaction of 4-hexen-1-ol with bromine in ether (solvent) gives a compound with the molecular formula $C_6H_{11}BrO$. Draw what you think the product of this reaction is ON THE FRONT COVER of this quiz in the box provided.



Last Name	ANSWER	First Name	KEY	MI
Student ID Number:				Total Score 35 / 30
Circle the name of your TA: Cari / Phil / Adam / Heather				
Discussion Section – Day:		Time:		

Chem 30A Fall 2004

QUIZ #2 (BUFF)

(15 Min)

Weds Nov 10th

INTERPRETATION OF THE QUESTIONS IS PART OF THE EXAM – DO NOT ASK FOR THE QUESTIONS TO BE EXPLAINED TO YOU

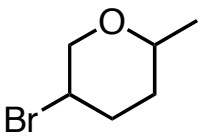
USE CAPITAL LETTERS WHEN FILLING IN THE BOXES AND BE CLEAR – IF WE CAN'T FIGURE OUT WHAT A LETTER IS, IT WILL AUTOMATICALLY BE GRADED AS INCORRECT

****DO NOT OPEN THIS EXAM UNTIL INSTRUCTED TO DO SO****

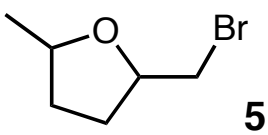
Q	1	2	3	4	5	6	7	8	9	10	Total
X	B	C	D	B	B	B	D	C	D	D	30

ANSWER TO BONUS QUESTION

6-membered ring more stable, but 5-membered product puts δ+ on carbon better able to stabilize it in the transition state (2° vs 1°)



or



5

Being eaten by a crocodile is just like going to sleep... in a giant blender – Homer J Simpson

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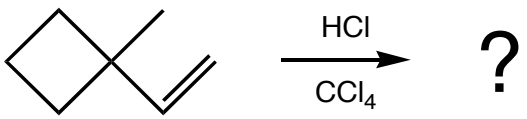
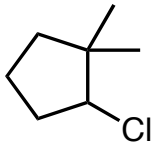
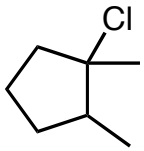
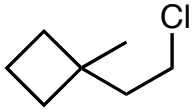
Questions 1–10 are worth **3** points each. The bonus is worth **5** points.

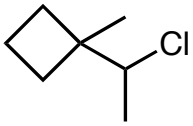
1. What is the MAJOR product of the reaction shown below?

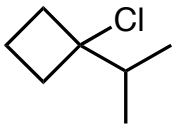


A


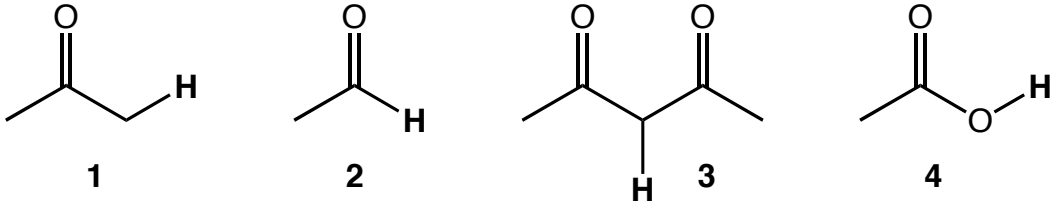
B


C


D


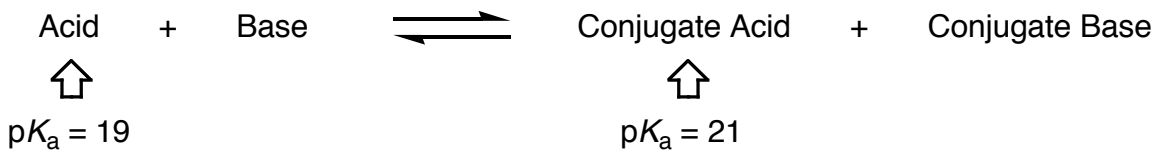
E


2. What is the order of acidity (from lowest pK_a value to highest pK_a value) of the bold hydrogen (**H**) atoms shown highlighted in the compounds drawn below?



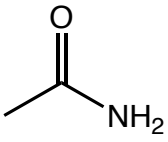
A 2, 4, 3, 1 **B** 3, 1, 4, 2 **C** 4, 3, 1, 2 **D** 3, 4, 2, 1 **E** 4, 2, 1, 3

3. The equilibrium constant (K_{eq}) for the reaction shown below is...?

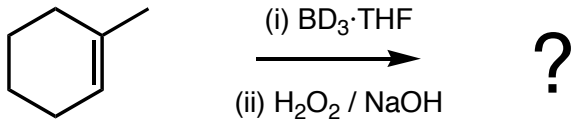


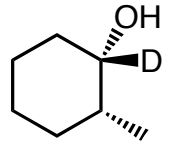
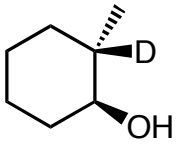
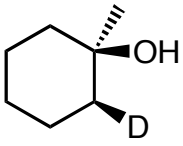
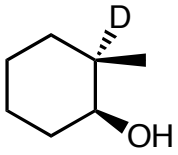
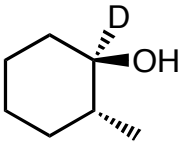
A 2 **B** –2 **C** 0.01 **D** 100 **E** 40

4. Which of the compounds drawn below is the strongest base?

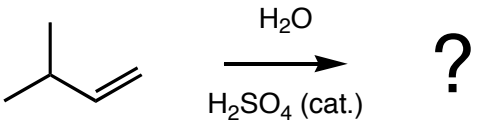
A CH_3NH_2 **B** $NaNH_2$ **C**  **D** NH_3 **E** NH_4Cl

5. Hydroboration/oxidation of 1-methylcyclohexene with deuterated borane·THF (reacts just like BH_3·THF, but has D atoms instead of H) gives which compound?



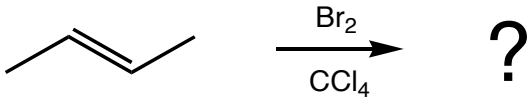
A  **B**  **C**  **D**  **E** 

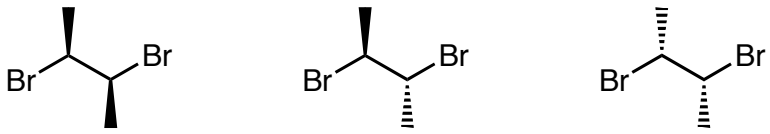
6. What is the MAJOR product of the reaction shown below?



A 2,2-dimethyl-propan-1-ol
B 2-methyl-butan-2-ol
C 3-methyl-butan-2-ol
D 3-methyl-butan-1-ol
E 2-methyl-butan-1-ol

7. The product(s) of the reaction shown below are?

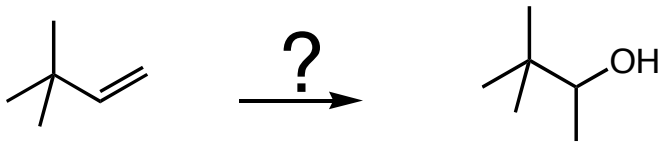




1 **2** **3**

A Only 1 and 3 **B** 1, 2, and 3 **C** Only 3 **D** Only 2 **E** Only 1

8. Which combination(s) of reagents would give rise to the reaction shown below?



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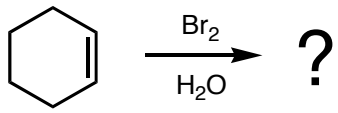

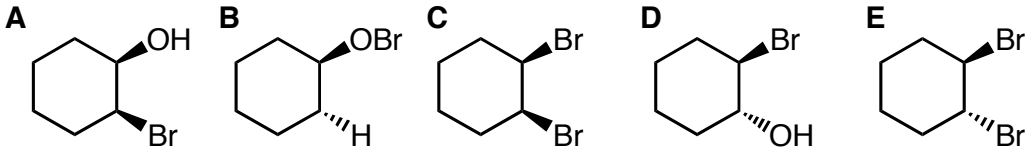

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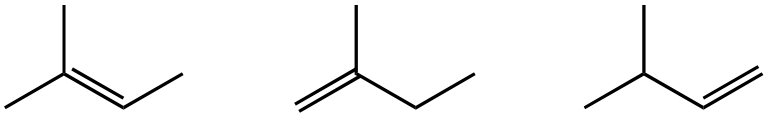

1 **2** **3**

A Only 2 **B** Only 1 and 3 **C** Only 1 **D** 1, 2, and 3 **E** Only 3

BONUS: The reaction of 5-hexen-2-ol with bromine in ether (solvent) gives a compound with the molecular formula $C_6H_{11}BrO$. Draw what you think the product of this reaction is ON THE FRONT COVER of this quiz in the box provided.