



ORGANIC CHEMISTRY

REDOX REACTIONS

DR. MIOY T. HUYNH | YALE UNIVERSITY

CHEMISTRY 165B | SPRING 2019

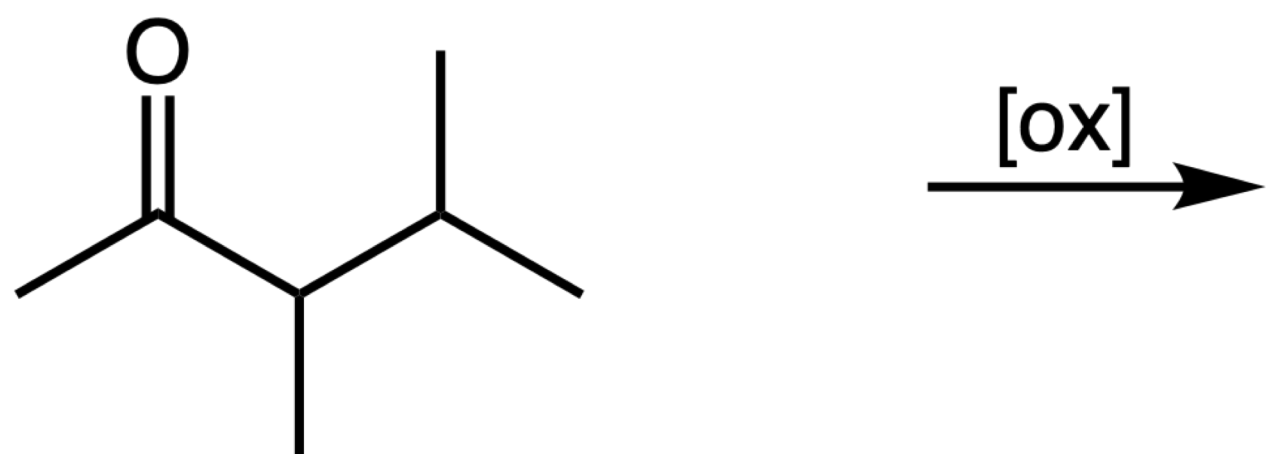
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PRACTICE PROBLEM 1

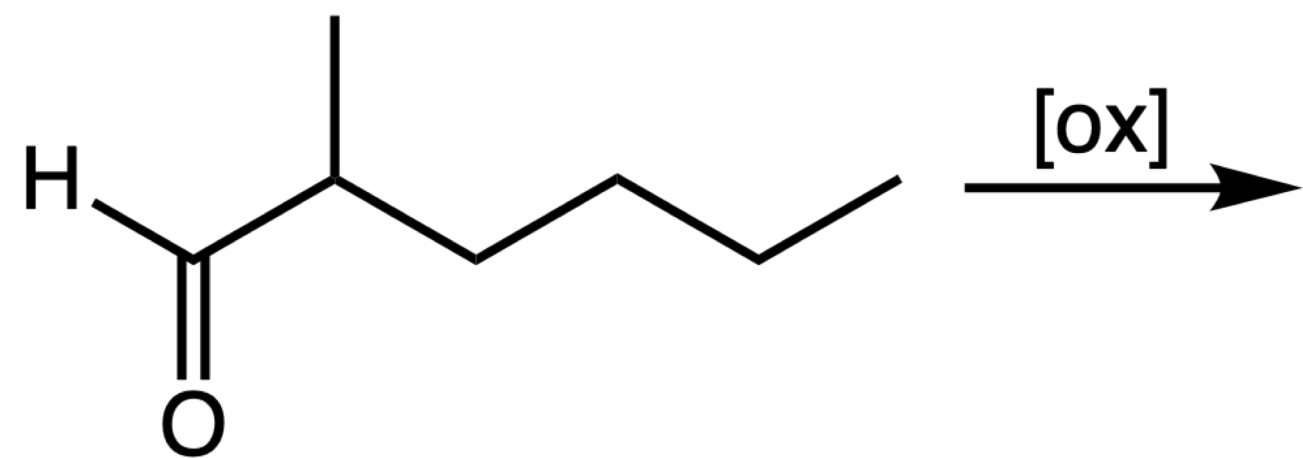
What are the products of the following oxidations?

— *answer* —

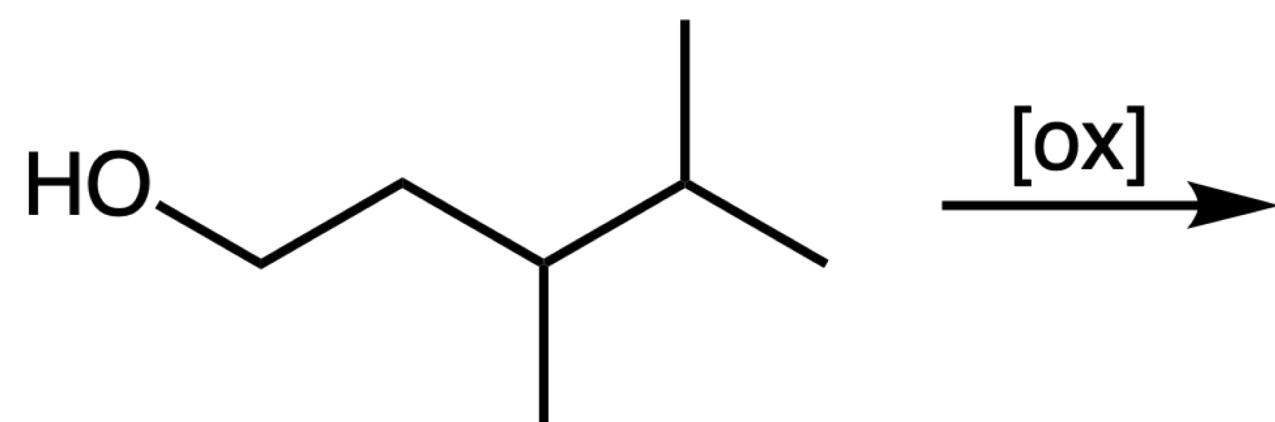
A) 3,4-dimethylpentan-2-one



B) 2-methylhexan-1-al



C) 3,4-dimethylpentan-1-ol

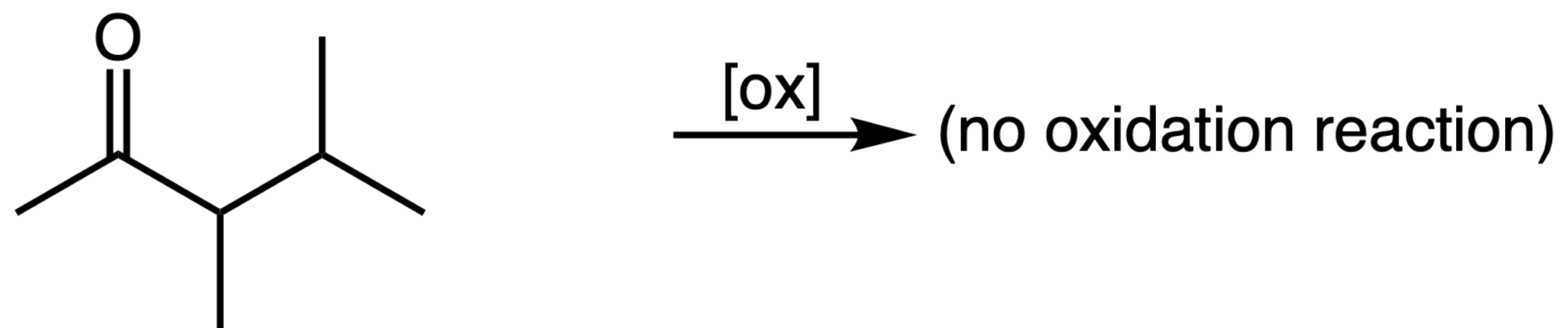


PRACTICE PROBLEM 1

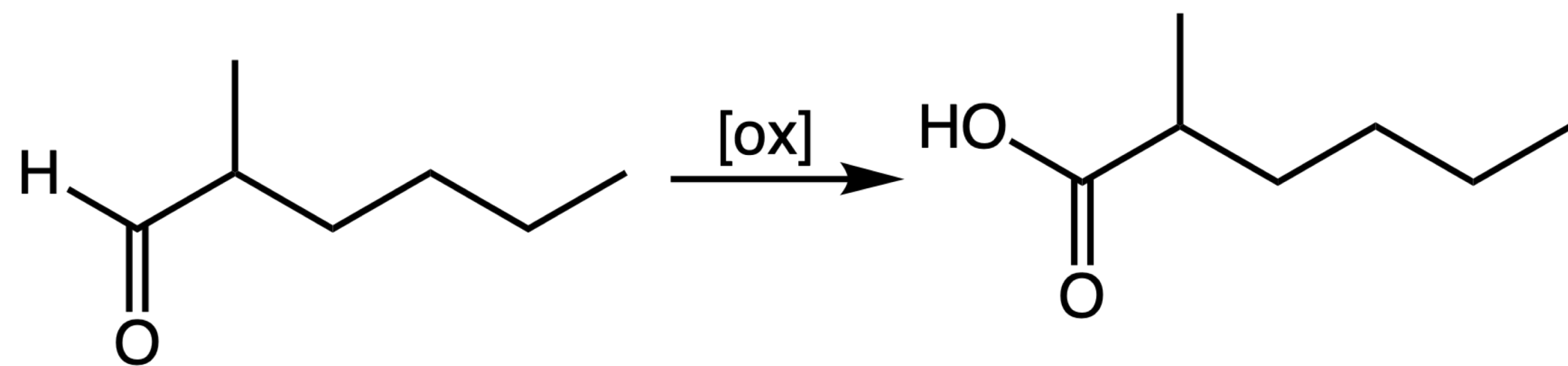
What are the products of the following oxidations?

— answer —

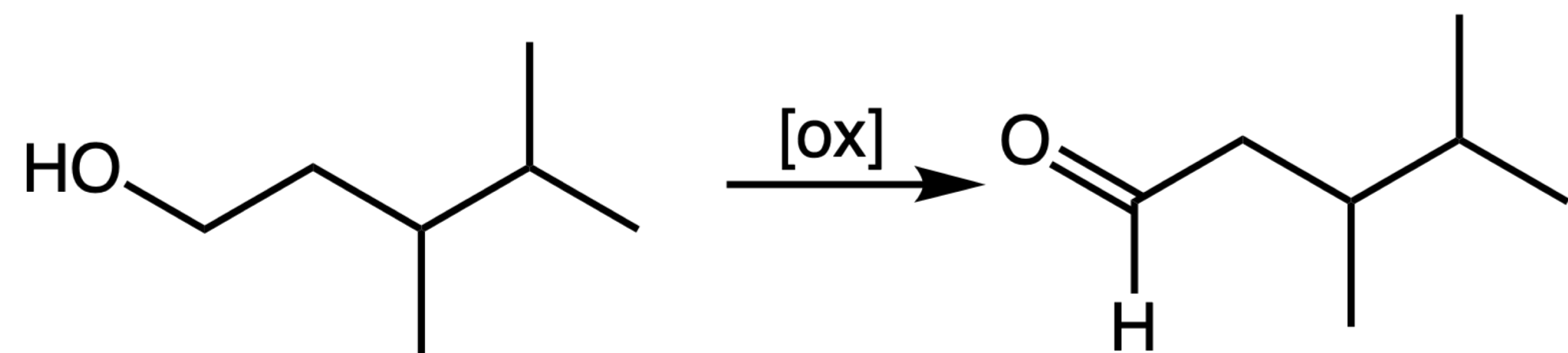
A) 3,4-dimethylpentan-2-one



B) 2-methylhexan-1-al



C) 3,4-dimethylpentan-1-ol

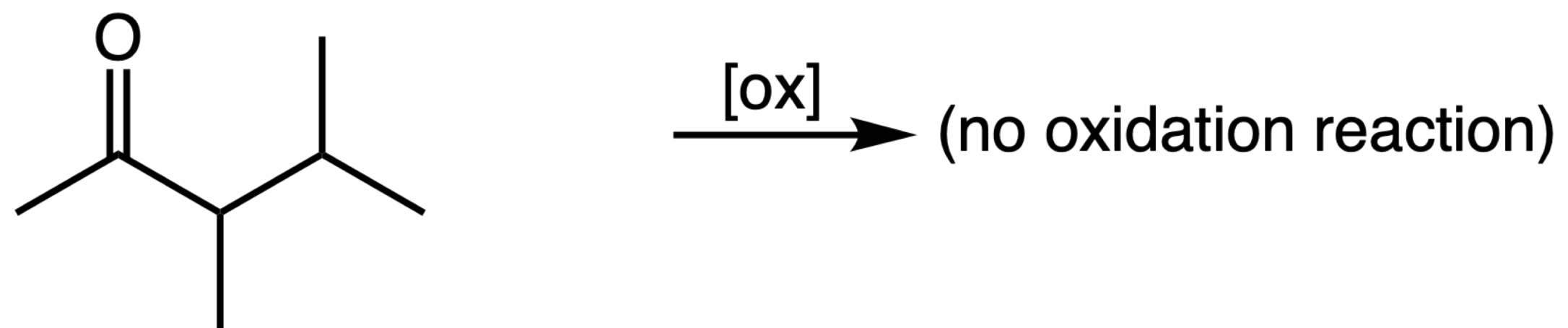


PRACTICE PROBLEM 1

What are the products of the following oxidations?

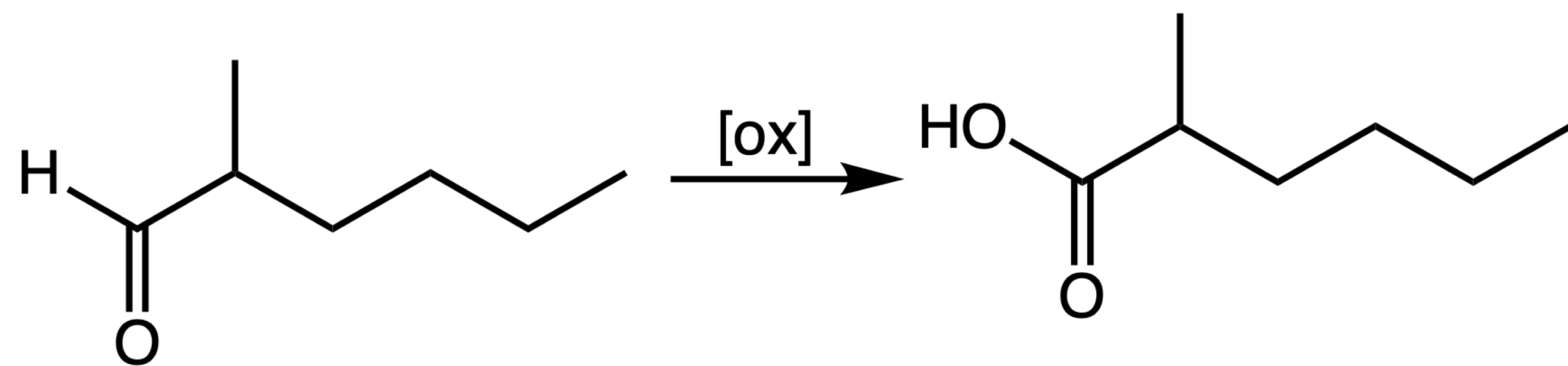
— answer —

A) 3,4-dimethylpentan-2-one



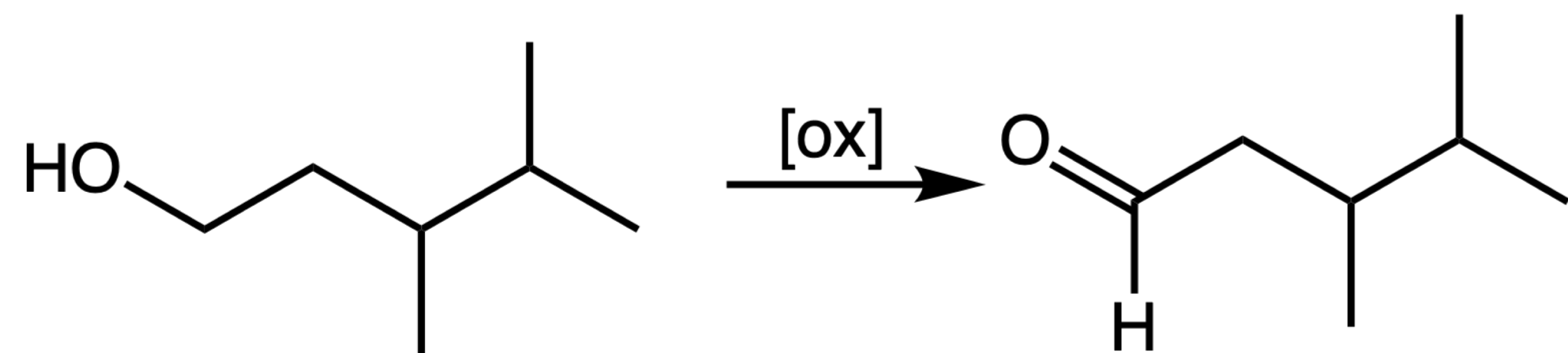
D) 3-methylhexan-2-ol

B) 2-methylhexan-1-al



E) 2-methylhexan-2-ol

C) 3,4-dimethylpentan-1-ol



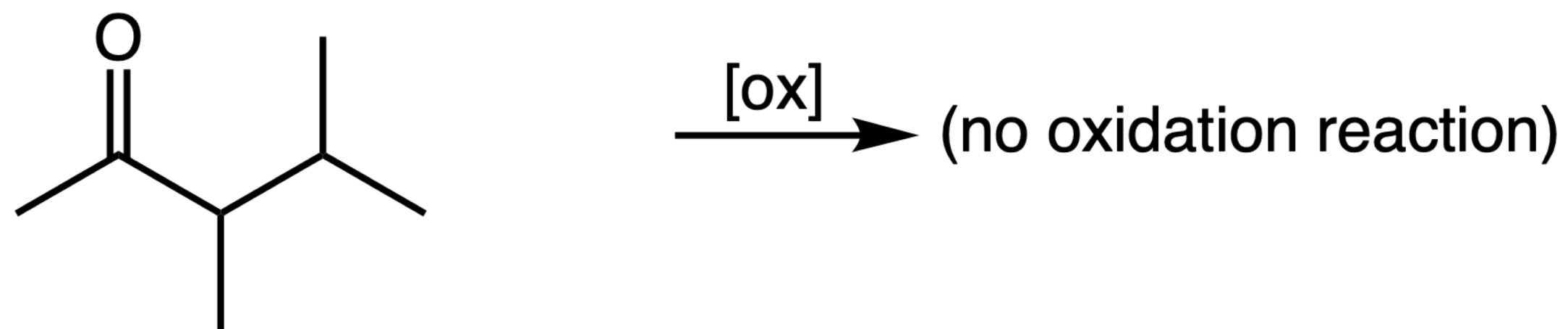
F) 3-methylhexan-1-ol

PRACTICE PROBLEM 1

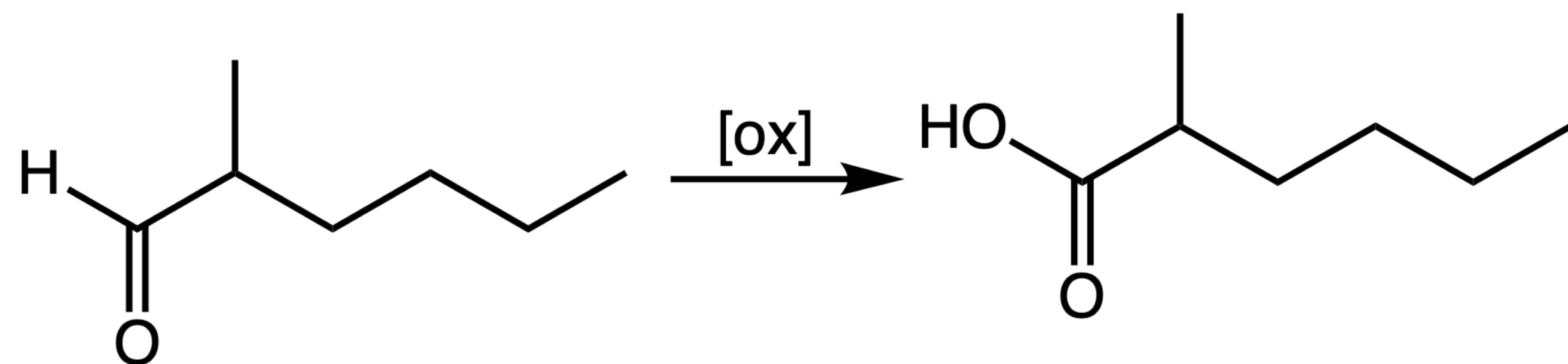
What are the products of the following oxidations?

— answer —

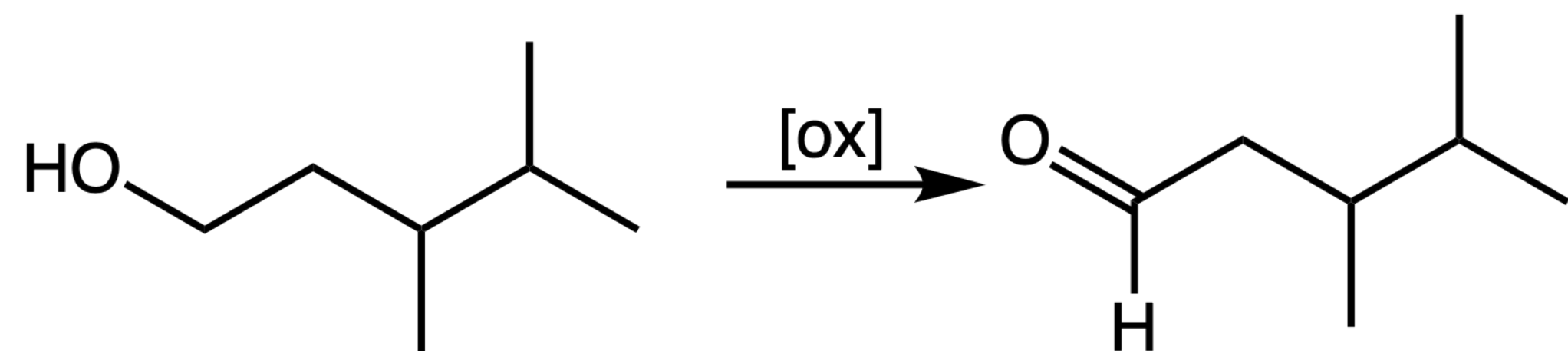
A) 3,4-dimethylpentan-2-one



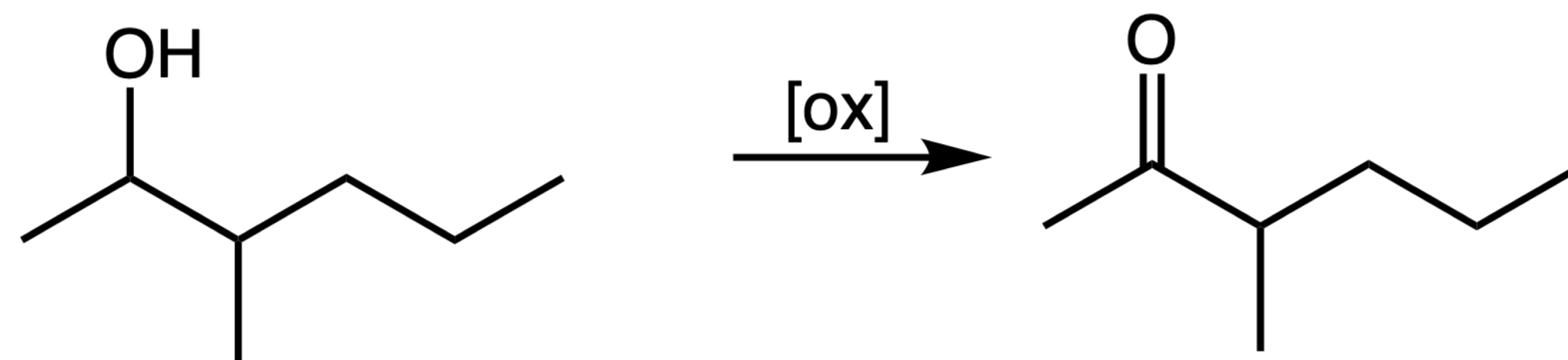
B) 2-methylhexan-1-al



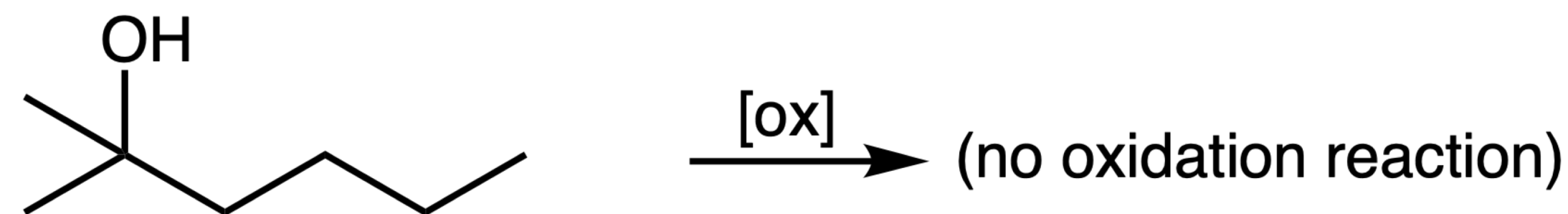
C) 3,4-dimethylpentan-1-ol



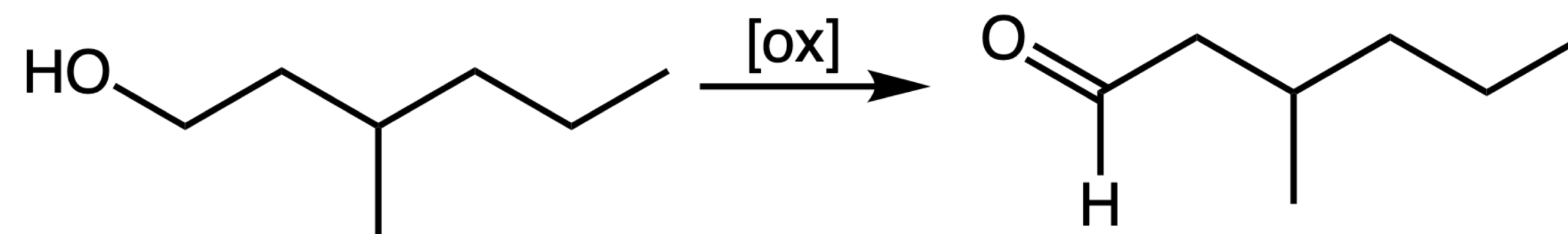
D) 3-methylhexan-2-ol



E) 2-methylhexan-2-ol



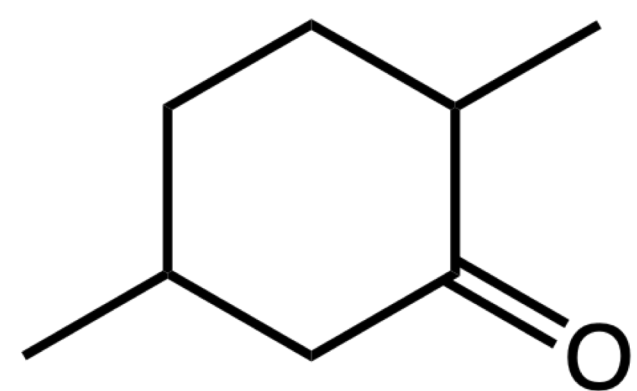
F) 3-methylhexan-1-ol



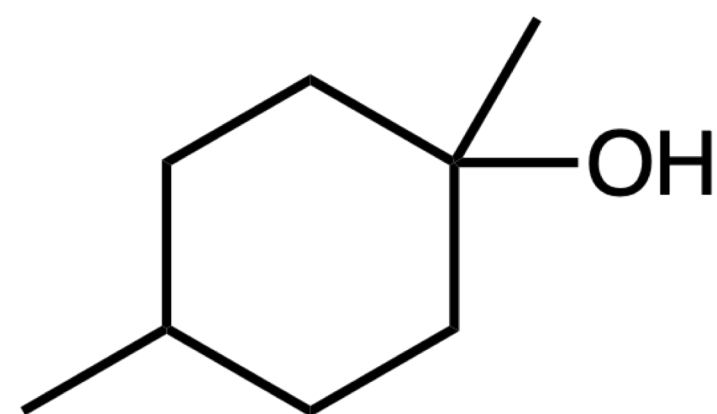
PRACTICE PROBLEM 2

How many of the following compounds could be oxidized to yield a ketone?

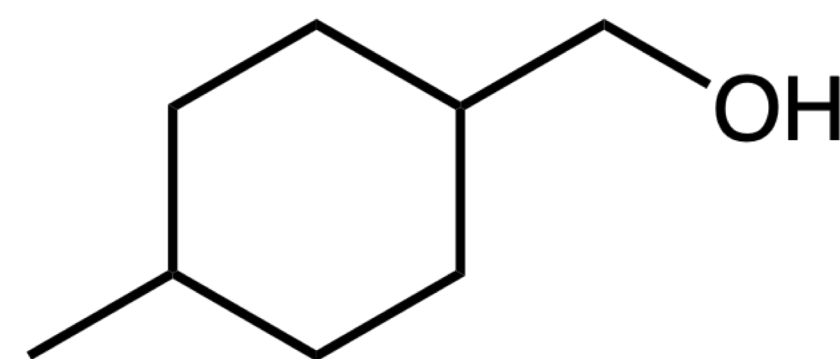
— *answer* —



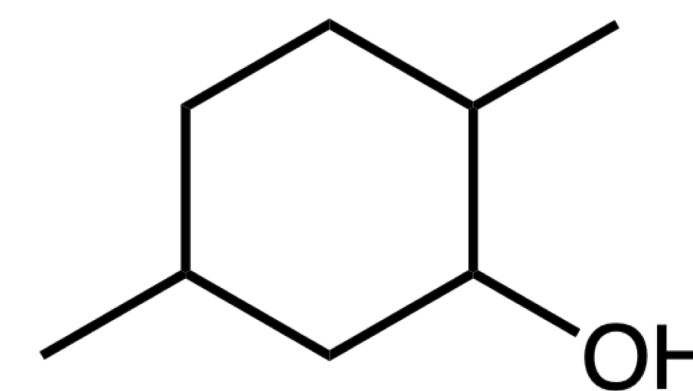
A



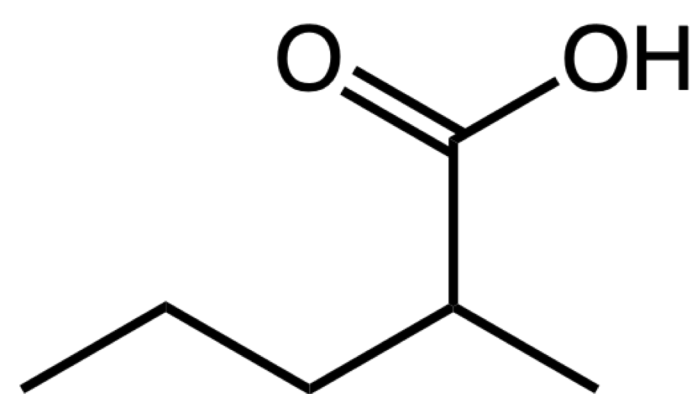
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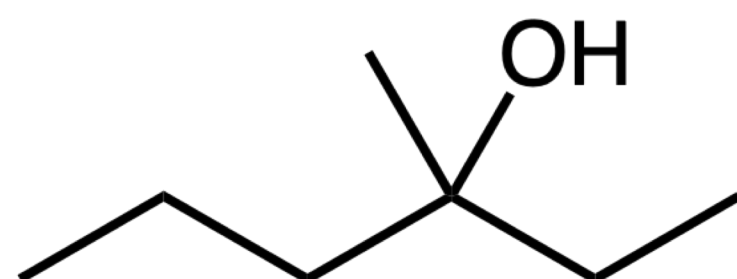
C



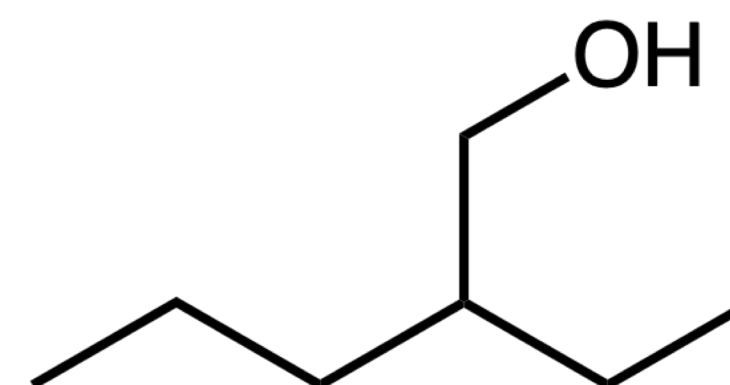
D



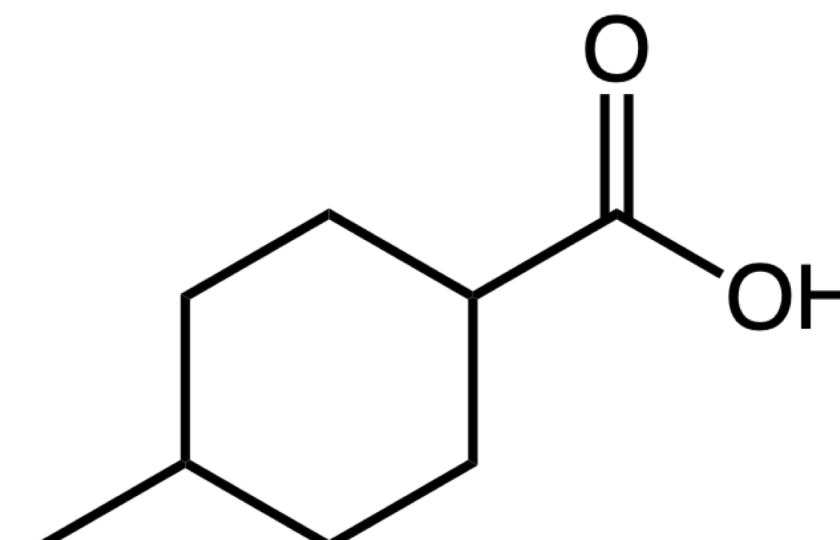
E



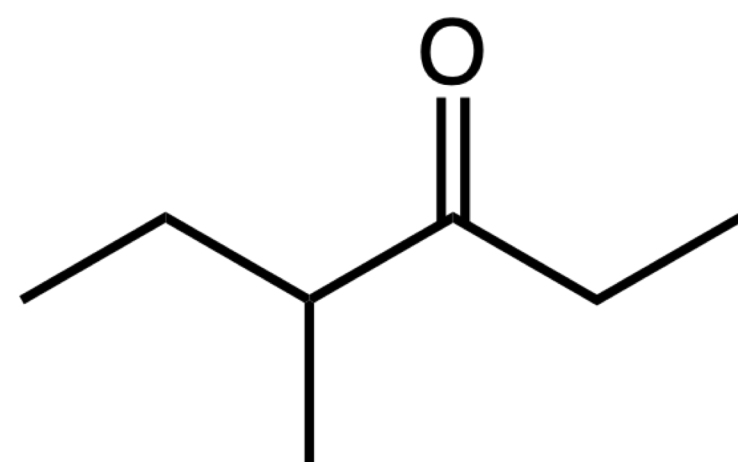
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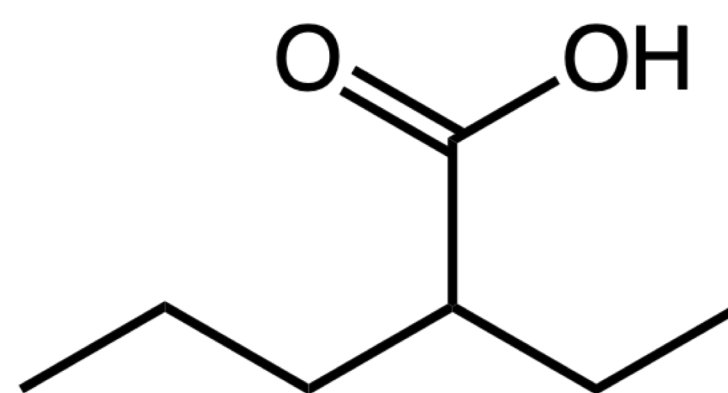
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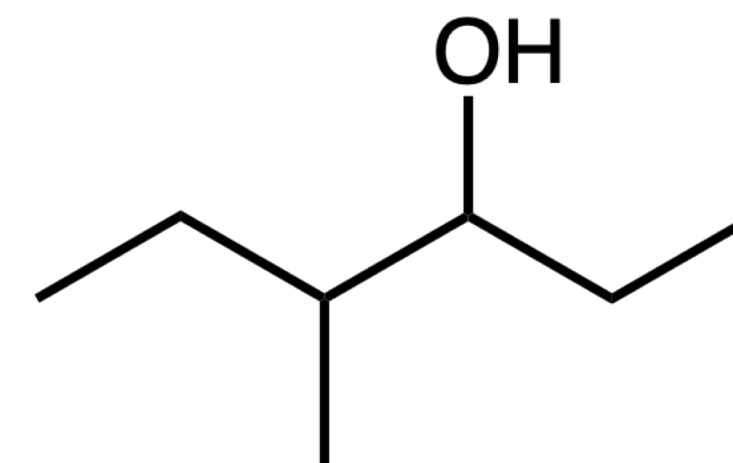
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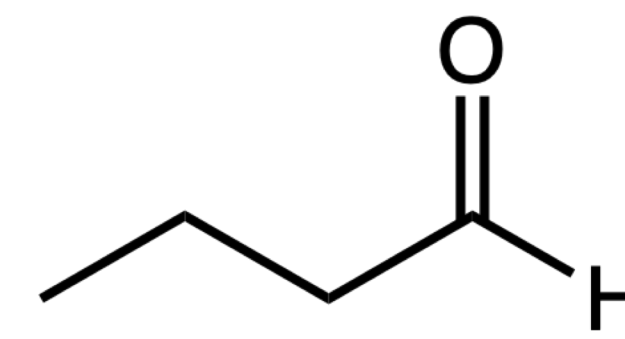
I



J



K

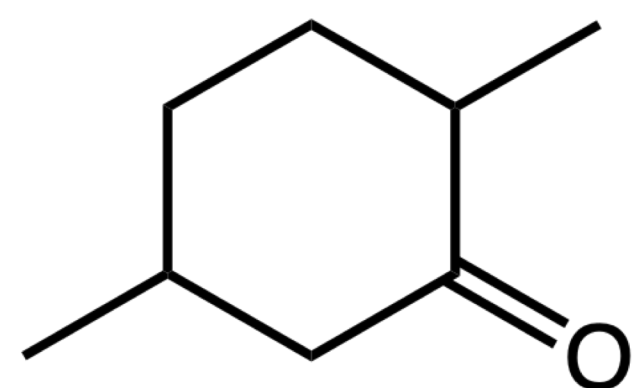


L

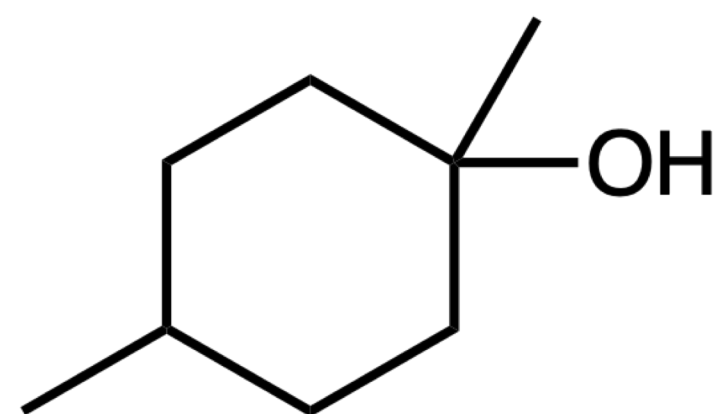
PRACTICE PROBLEM 2

How many of the following compounds could be oxidized to yield a ketone?

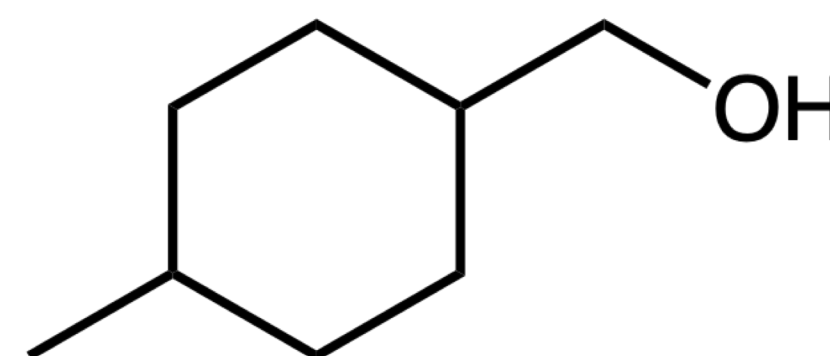
— answer —



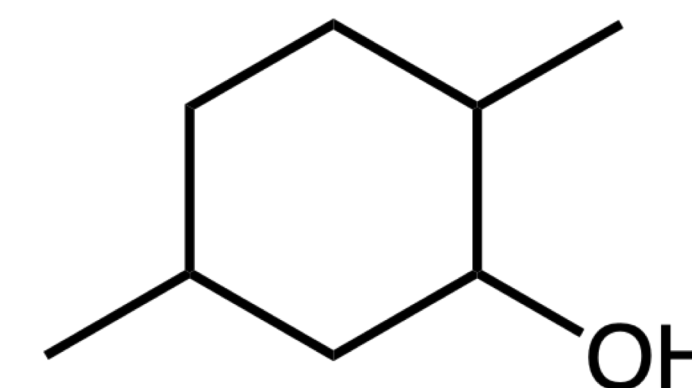
A



B

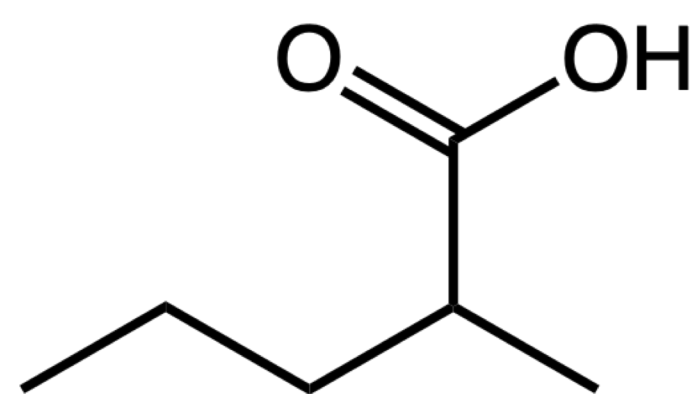


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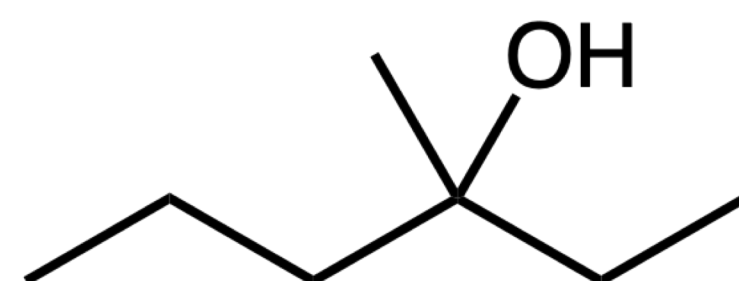


D

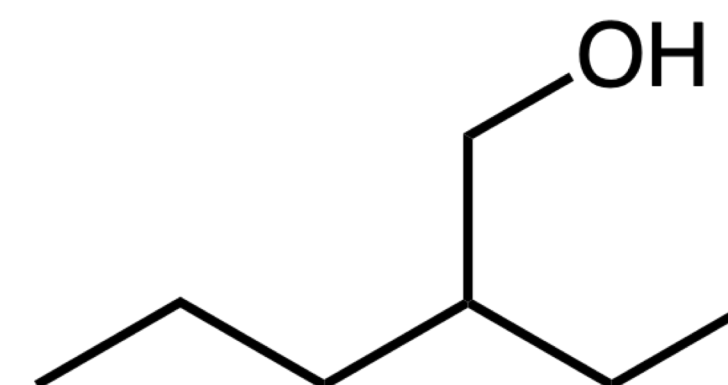
A ketone can only be produced from the oxidation of a secondary (2°) alcohol, where the -OH group is attached to a carbon with two groups or substituents off it.



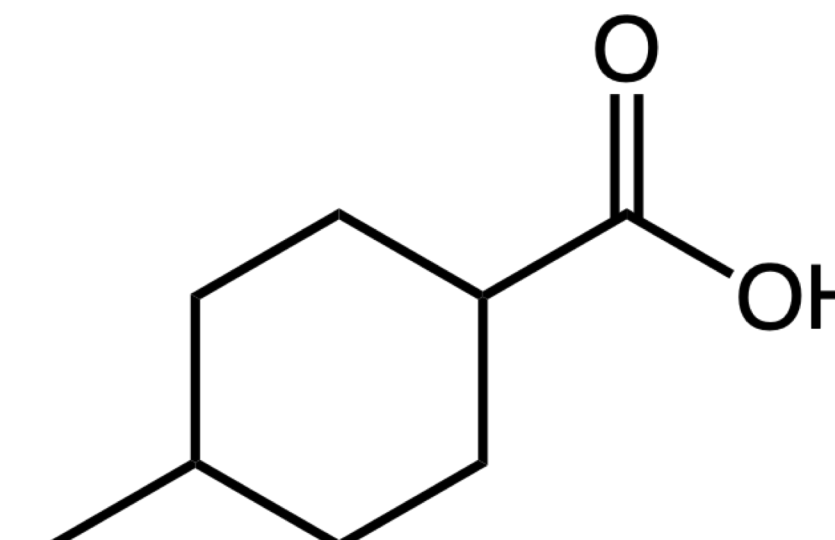
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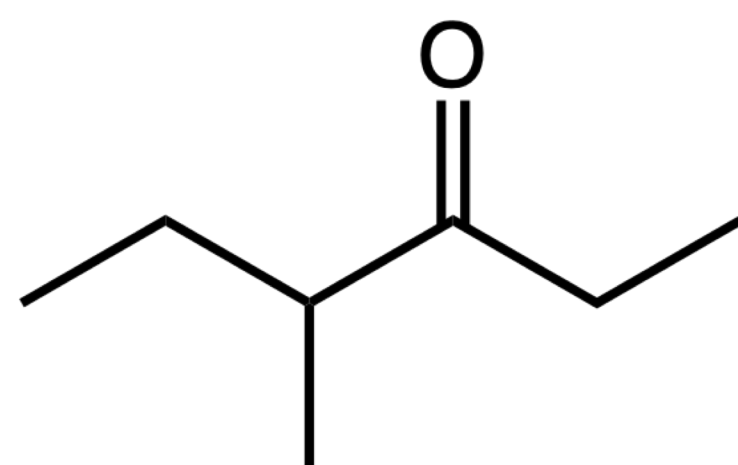
F



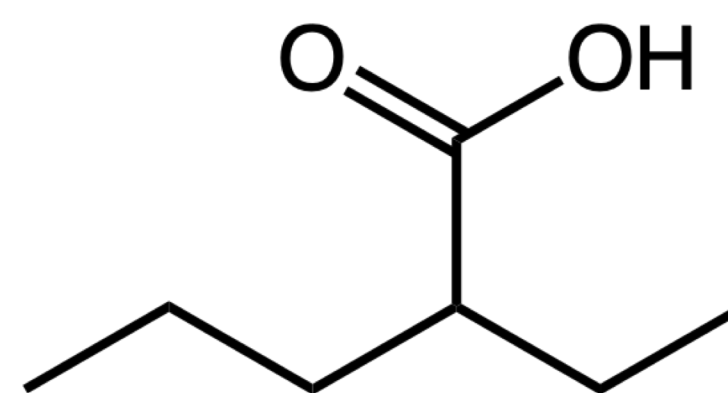
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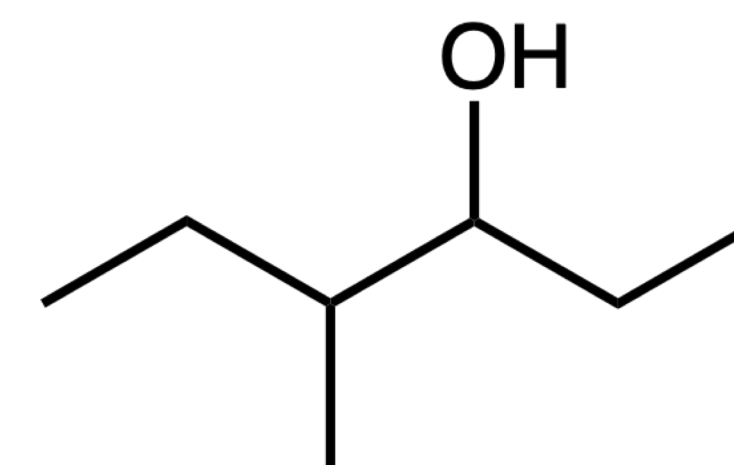
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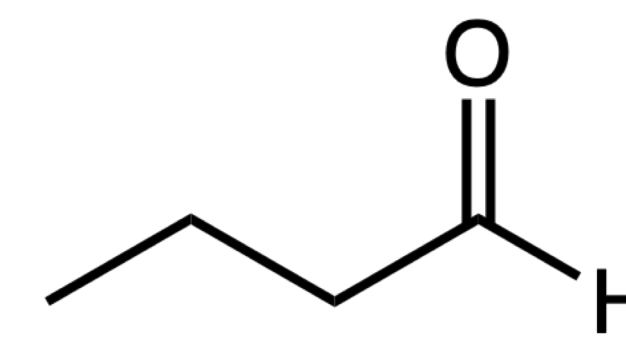
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J



K

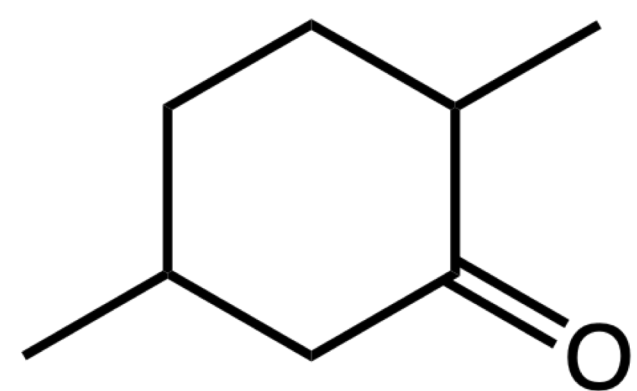


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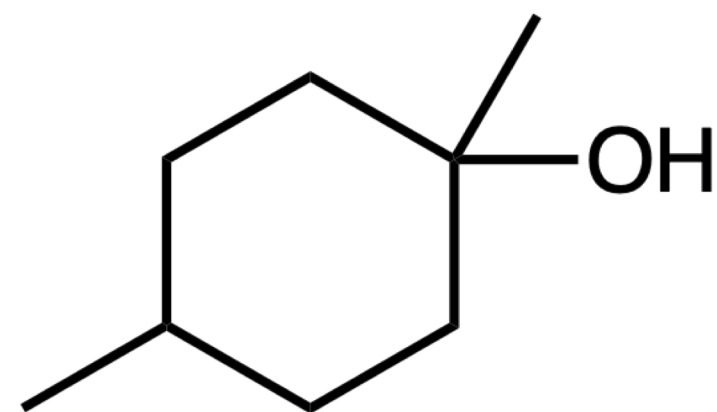
PRACTICE PROBLEM 3

How many of the following compounds could be reduced to yield a primary (1°) alcohol?

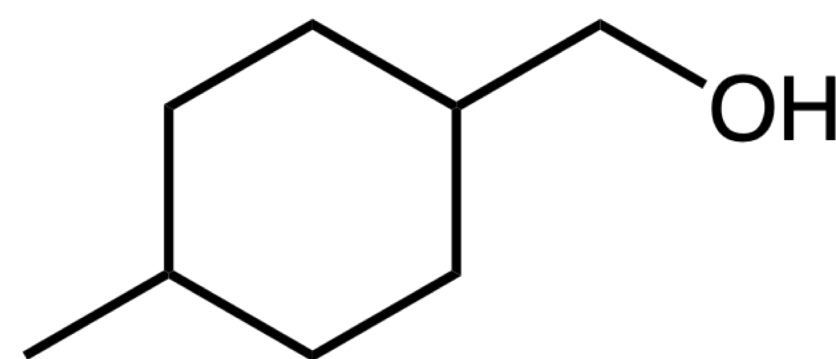
— *answer* —



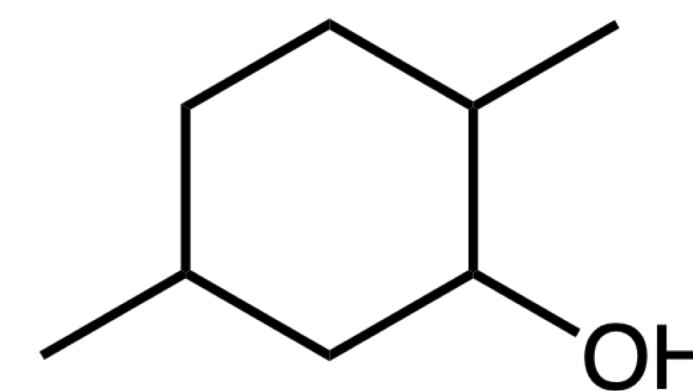
A



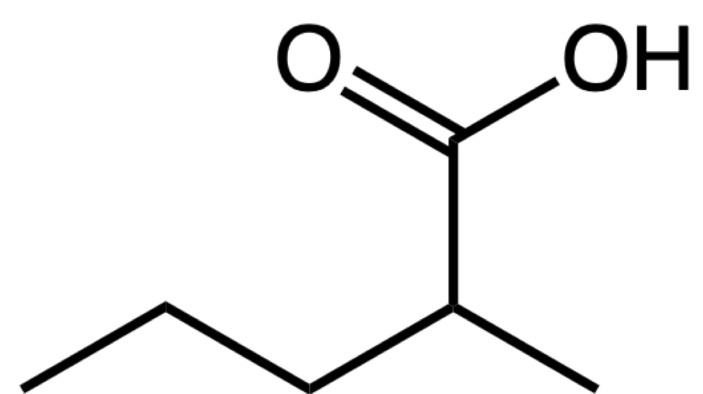
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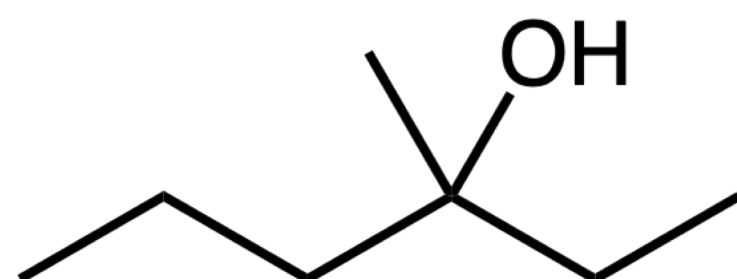
C



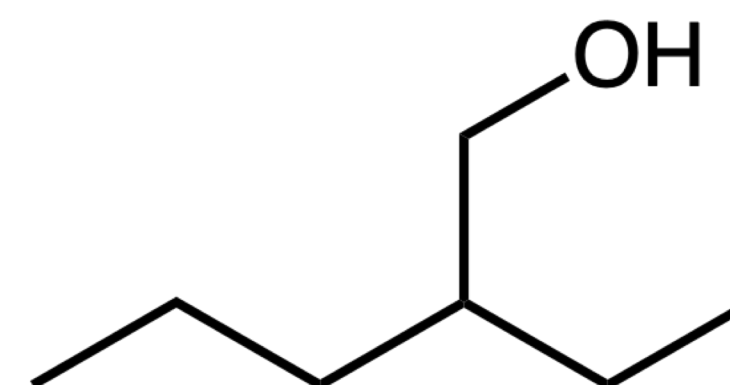
D



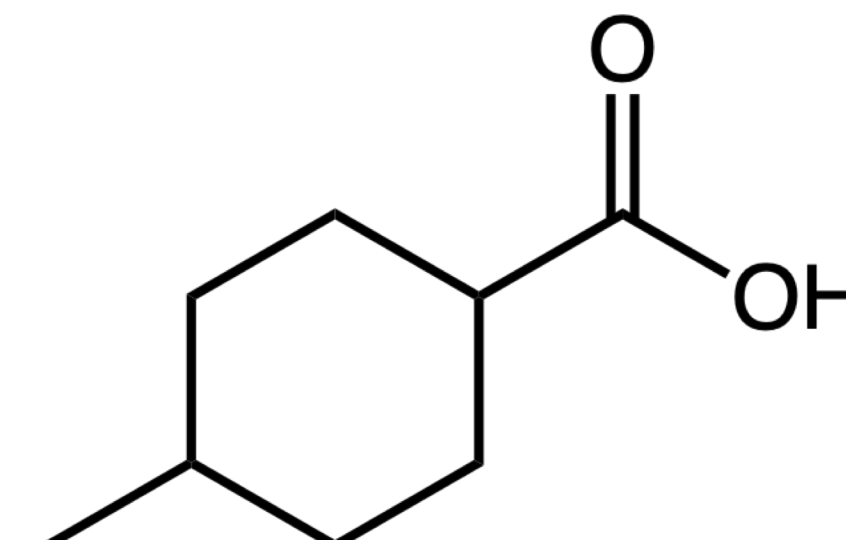
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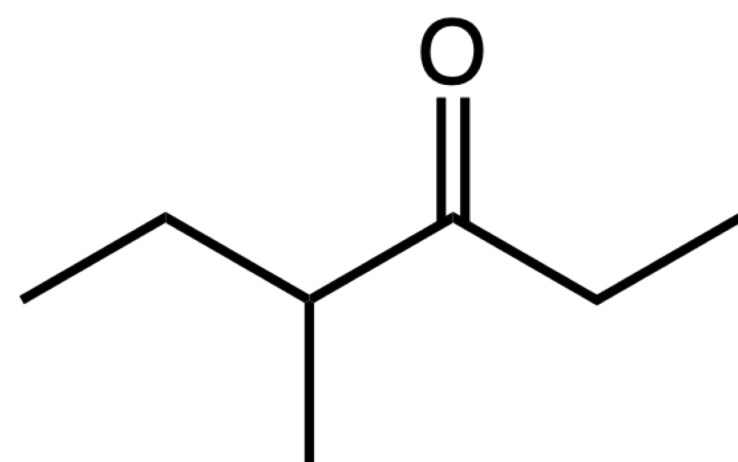
F



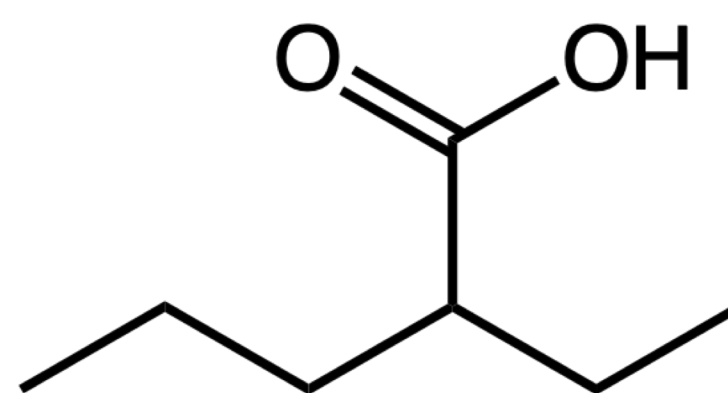
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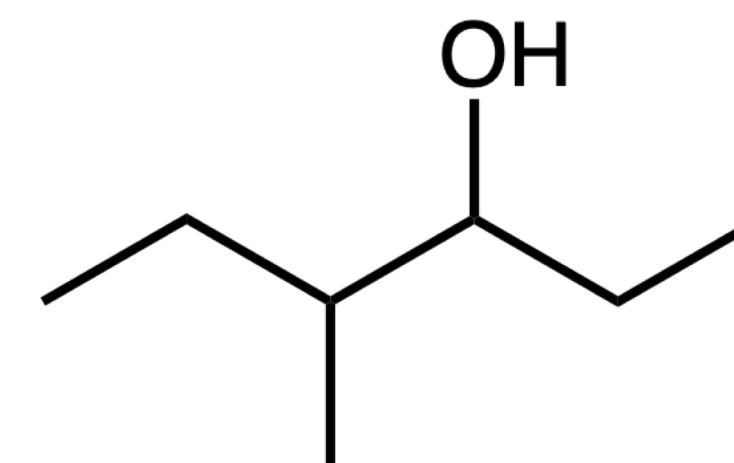
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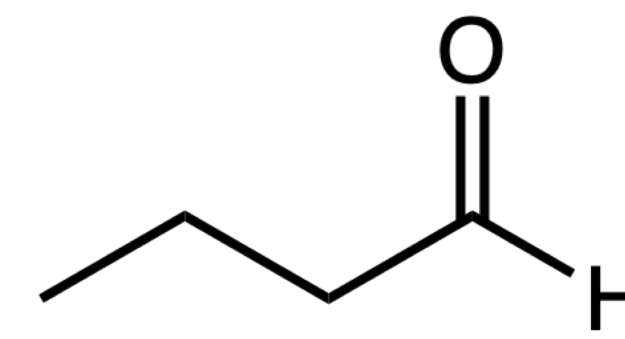
I



J



K

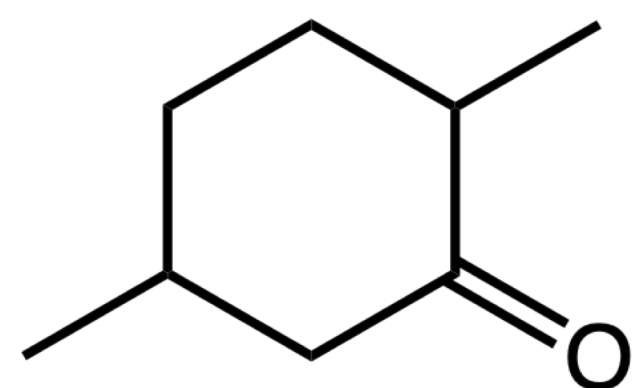


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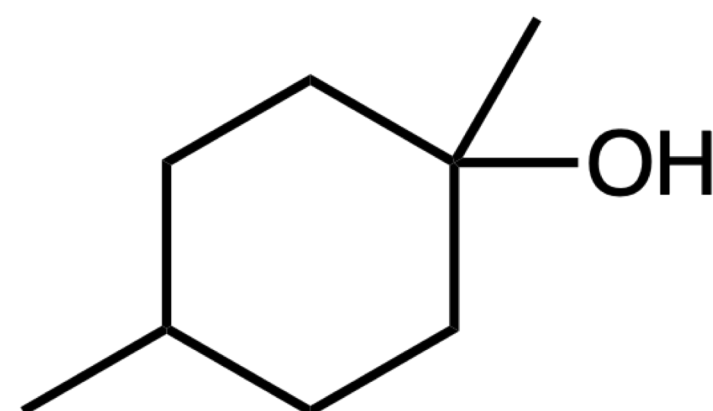
PRACTICE PROBLEM 3

How many of the following compounds could be reduced to yield a primary (1°) alcohol?

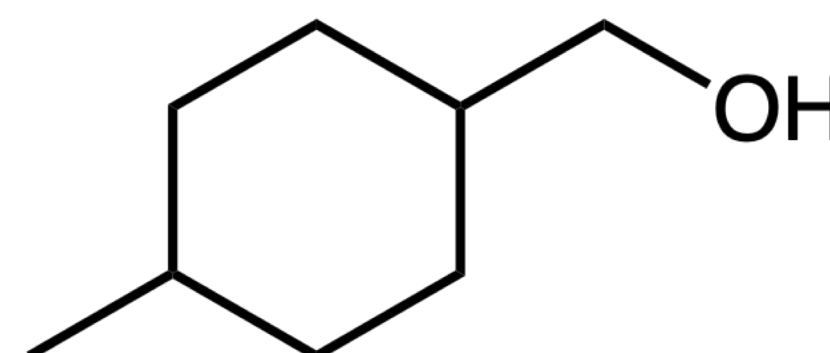
— answer —



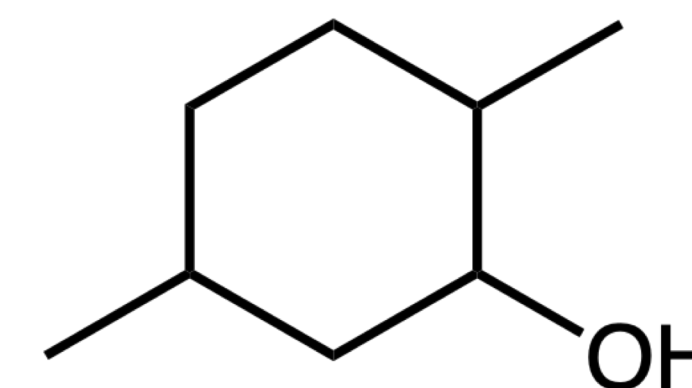
A



B

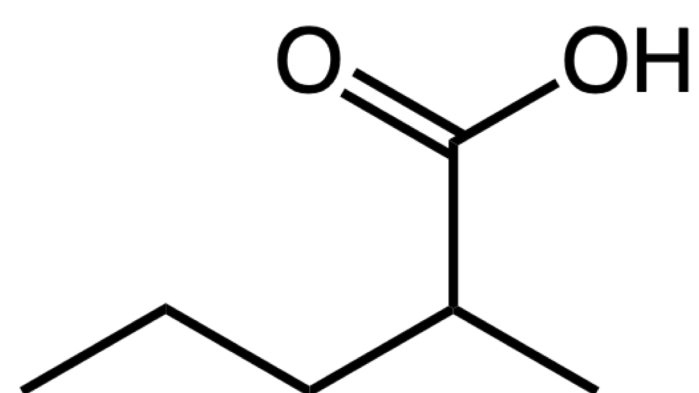


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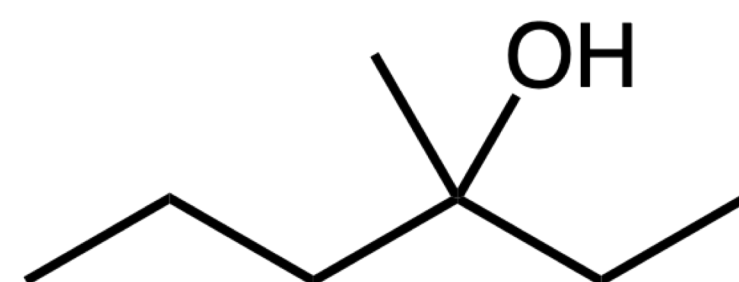


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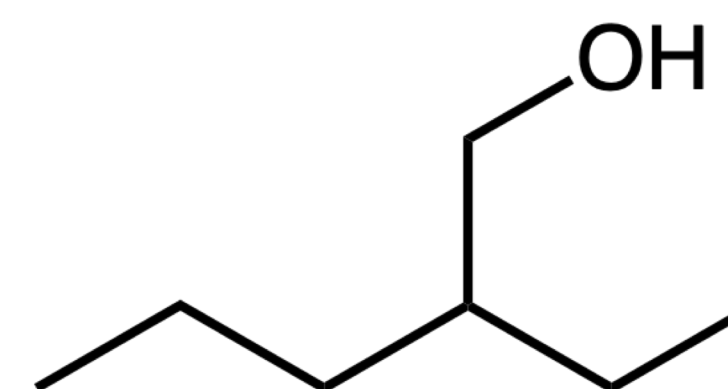
A primary (1°) alcohol, where the -OH group is attached to a carbon with only one group or substituent off it, can be made from the reduction of aldehydes and carboxylic acids.



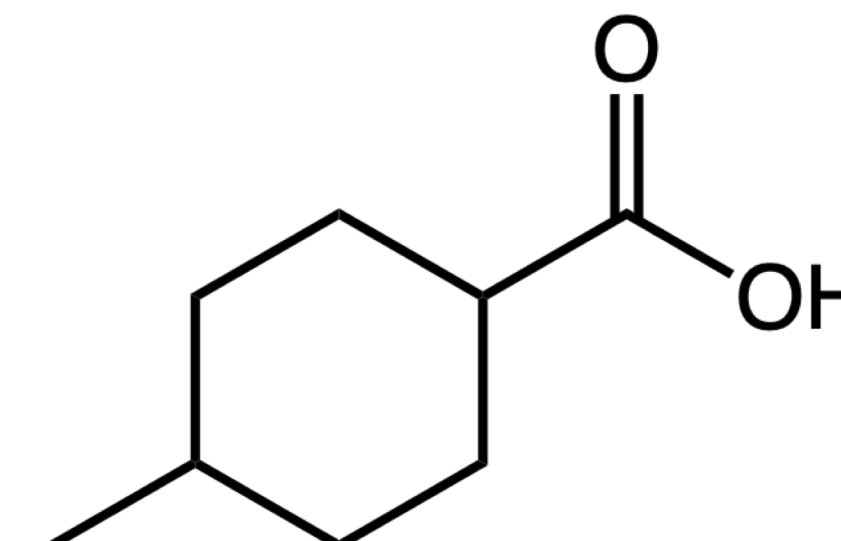
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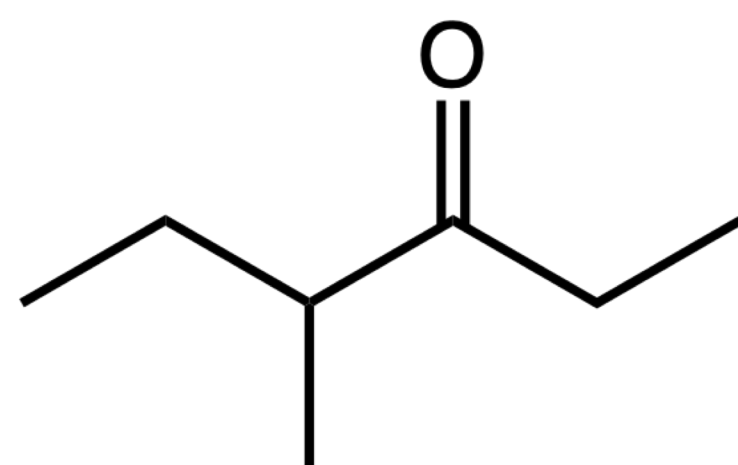
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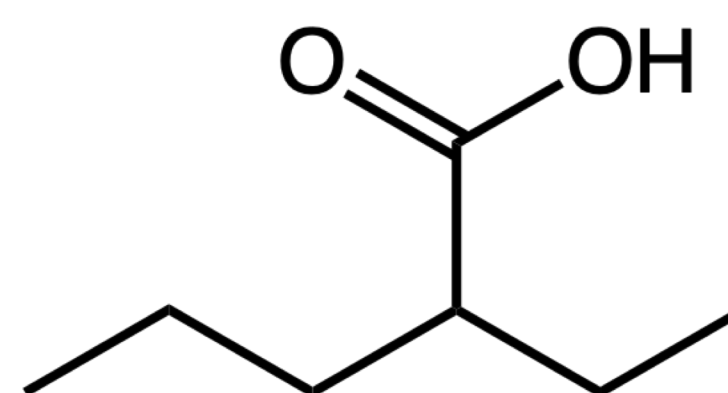
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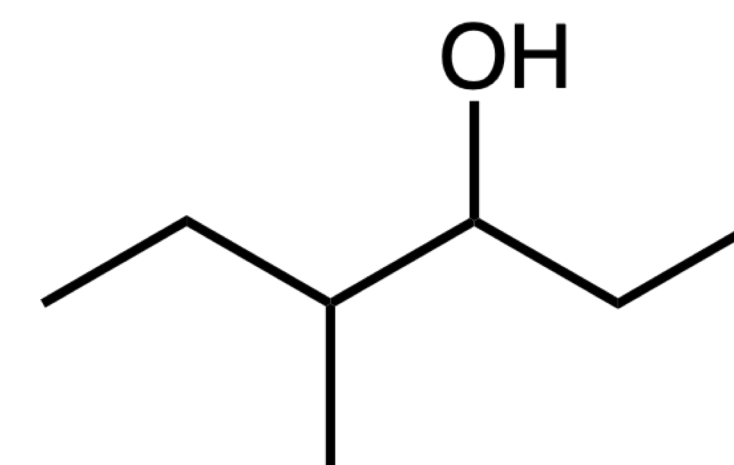
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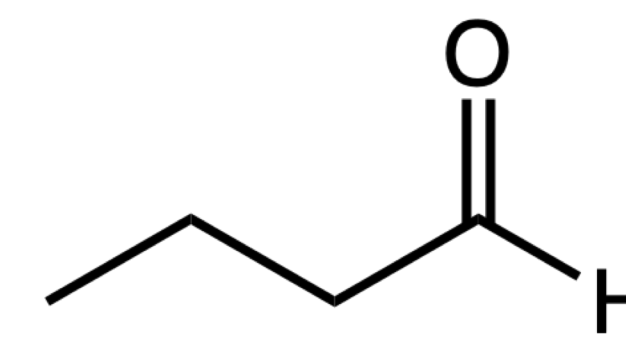
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