

1.

A $\begin{array}{c} \text{CN} \quad \text{H} \\ \quad \\ \text{C} = \text{C} \\ \quad \\ \text{H} \quad \text{H} \end{array}$	B $\begin{array}{c} \text{Cl} \quad \text{H} \\ \quad \\ \text{C} = \text{C} \\ \quad \\ \text{H} \quad \text{Cl} \end{array}$	C $\begin{array}{c} \text{CH}_3 \quad \text{H} \\ \quad \\ \text{C} = \text{C} \\ \quad \\ \text{H} \quad \text{CH}_3 \end{array}$
D $\begin{array}{c} \text{Cl} \quad \text{H} \\ \quad \\ \text{C} = \text{C} \\ \quad \\ \text{Cl} \quad \text{H} \end{array}$	E $\begin{array}{c} \text{H} \quad \text{H} \\ \quad \\ \text{C} = \text{C} \\ \quad \\ \text{H} \quad \text{H} \end{array}$	F $\begin{array}{c} \text{CH}_3 \quad \text{H} \\ \quad \\ \text{C} = \text{C} \\ \quad \\ \text{H} \quad \text{H} \end{array}$

Identify the **two** isomers.

A	B	C
D	E	F

2.

The table gives information about some alkanes.

Name	Density g/cm ³
pentane	0.626
hexane	0.659
heptane	0.684
octane	0.703

Predict the density of the alkane with **nine** carbon atoms.

_____ g/cm³ **1**

3.

A student investigated the reaction of some fuels with oxygen.

The results are shown.

Fuel	Products
A	carbon dioxide
B	water
C	nitrogen, water
D	carbon dioxide, water

Name the **elements** which **must** be present in fuel **D**.

4. The grid shows the structural formulae of some hydrocarbons.

A $\begin{array}{ccccc} & \text{H} & \text{H} & \text{H} & \\ & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{H} \\ & & & & \\ & \text{H} & \text{H} & \text{H} & \end{array}$	B $\begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & \text{H} & & \\ & & & & & & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{H} \\ & & & & & & \\ & \text{H} & \text{H} & \text{H} & \text{H} & & \end{array}$	C $\begin{array}{c} \text{H} \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C} \\ \diagup \quad \diagdown \\ \text{H} - \text{C} - \text{C} - \text{H} \\ \diagdown \quad \diagup \\ \text{H} \quad \text{H} \end{array}$
D $\begin{array}{c} \text{H} \quad \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C} = \text{C} - \text{C} - \text{H} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \quad \text{H} \end{array}$	E $\begin{array}{c} \text{H} \quad \text{H} \\ \diagdown \quad \diagup \\ \text{H} - \text{C} - \text{C} - \text{H} \\ \diagup \quad \diagdown \\ \text{H} - \text{C} - \text{C} - \text{H} \\ \diagdown \quad \diagup \\ \text{H} \quad \text{H} \end{array}$	F $\begin{array}{c} \text{H} \quad \quad \text{H} \quad \text{H} \\ \diagdown \quad \diagup \\ \text{C} = \text{C} - \text{C} - \text{C} - \text{H} \\ \diagup \quad \diagdown \\ \text{H} \quad \text{H} \quad \text{H} \end{array}$

(a) Identify the hydrocarbon which reacts with hydrogen to form butane.

A	B	C
D	E	F

1

(b) Identify the **two** isomers.

A	B	C
D	E	F

1

(c) Identify the structural formula which represents propene.

A	B	C
D	E	F

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5. The structures of some hydrocarbons are shown in the grid.

A <pre> H H H \ / C=C-C-H / H H </pre>	B <pre> H H \ / C / \ H-C C-H H H </pre>	C <pre> H H H H-C-C-C-H H H H </pre>
D <pre> H H H H H-C-C-C-C-H H H H H </pre>	E <pre> H H H H / \ H-C-C-C=C / \ H H H H H </pre>	F <pre> H H H-C-C-H H-C-C-H H H </pre>

(a) Identify the **two** hydrocarbons with the general formula C_nH_{2n} , which do **not** react quickly with bromine solution.

A	B	C
D	E	F

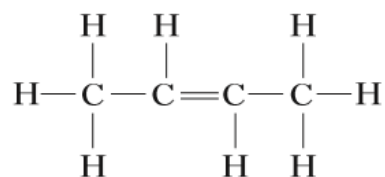
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(b) Identify the hydrocarbon which is the first member of a homologous series.

A	B	C
D	E	F

1

(c) Identify the **two** isomers of



A	B	C
D	E	F

1