



# Lista de Exercícios

## Nomenclatura Orgânica: Hidrocarbonetos – Parte 2

Professor Anderson Dino  
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## 1. Regras de nomenclatura

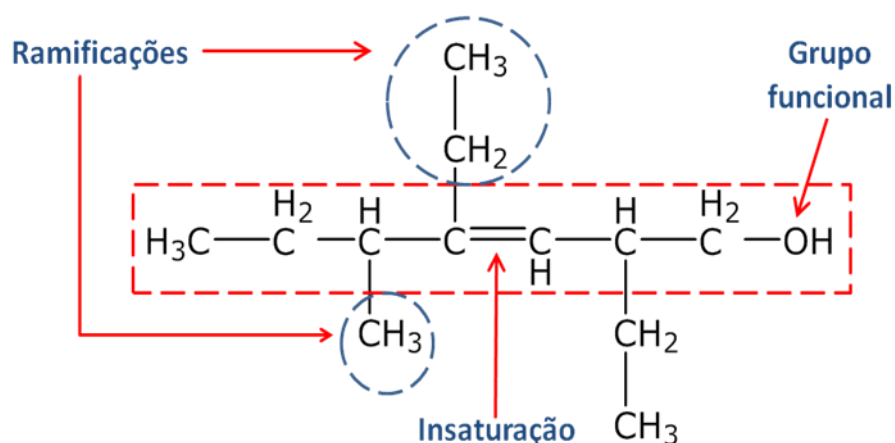
A **IUPAC** (International Union of Pure and Applied Chemistry) considera como a nomenclatura oficial dos compostos orgânicos a seguinte estrutura:

<b>PREFIXO</b>	<b>+</b>	<b>INFIXO</b>	<b>+</b>	<b>SUFIXO</b>
<b>Número de Átomos de Carbono</b>		<b>Tipo de Ligação entre Carbonos</b>		<b>Função Orgânica</b>
<b>1 = MET</b>		<b>AN</b>		<b>O</b>
<b>2 = ET</b>		SÓ LIGAÇÕES SIMPLES		HIDROCARBONETO
<b>3 = PROP</b>		<b>EN</b>		<b>OL</b>
<b>4 = BUT</b>		UMA LIGAÇÃO DUPLA		ÁLCOOL
<b>5 = PENT</b>		<b>IN</b>		<b>AL</b>
<b>6 = HEX</b>		UMA LIGAÇÃO TRIPLA		ALDEÍDO
<b>7 = HEPT</b>		<b>DIEN</b>		<b>ONA</b>
<b>8 = OCT</b>		DUAS LIGAÇÕES DUPLAS		CETONA
<b>9 = NON</b>		<b>TRIEIN</b>		<b>ÓICO</b>
<b>10 = DEC</b>		TRÊS LIGAÇÕES DUPLAS		ÁCIDO CARBOXÍLICO
<b>11 = UNDEC</b>		<b>DIIN</b>		<b>AMIDA</b>
<b>12 = DODEC</b>		DUAS LIGAÇÕES TRIPLAS		AMIDA

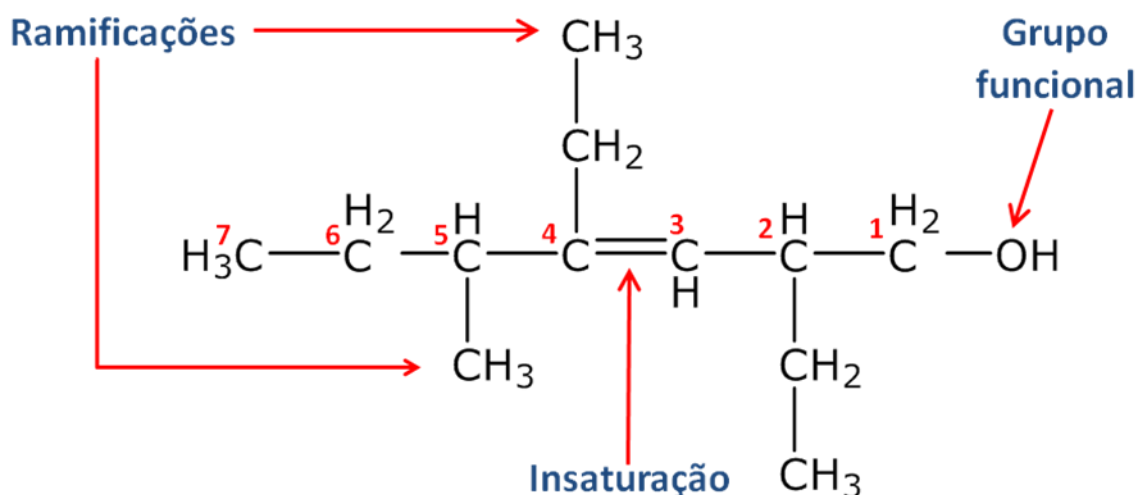
## 2. Numeração das cadeias

A cadeia principal para cadeias carbônicas abertas é aquela com maior número de átomos de carbonos que contenham:

- grupo funcional (procure átomos que não sejam carbono e hidrogênio);
- maior número de insaturações (ligações duplas ou triplas entre carbonos);
- maior número de grupos radicais substituintes.



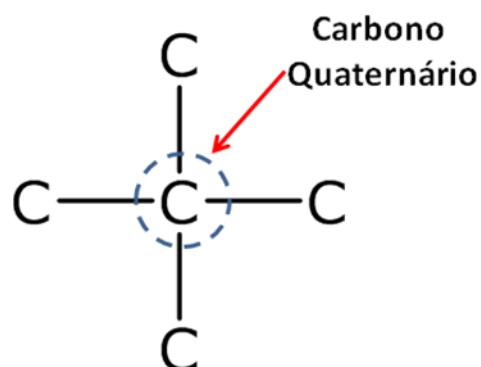
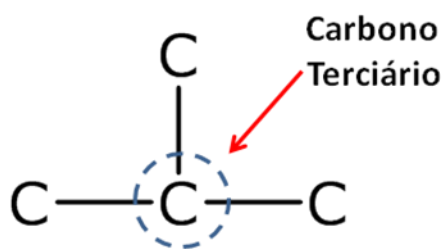
Começar a numerar a cadeia com os menores números possíveis a partir da extremidade de acordo com a preferência:



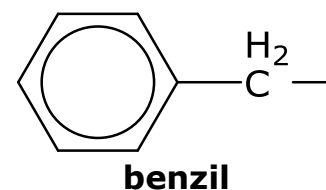
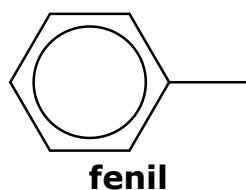
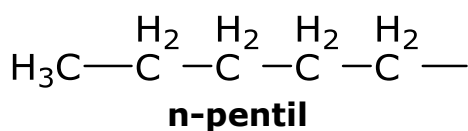
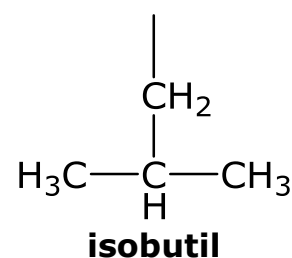
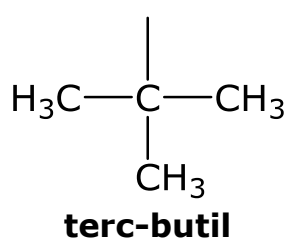
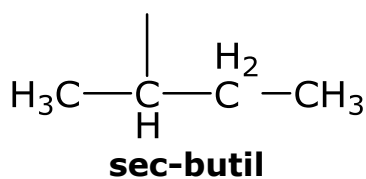
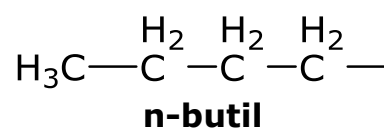
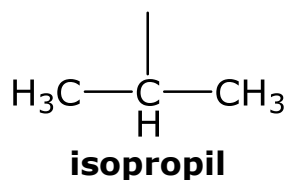
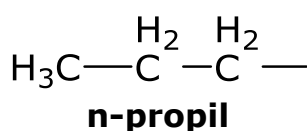
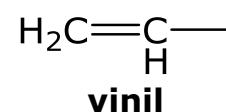
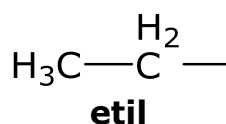
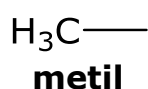
Quando houver só uma possibilidade, a numeração não precisa ser indicada.

### 3. Ramificações

Hidrocarbonetos ramificados apresentam pelo menos um carbono terciário ou quaternário. Não existem ramificações em carbonos secundários e primários.



### 3.a. Principais ramificações

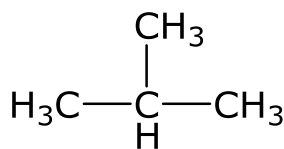


### 4. Regra de nomenclatura para compostos orgânicos ramificados

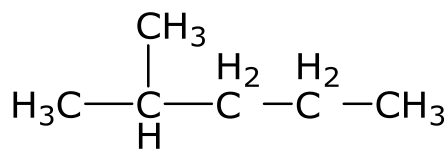
**RADICAL + PREFIXO + INFIXO + SUFIXO**

**Observação:** radicais diferentes devem ser colocados em ordem alfabética

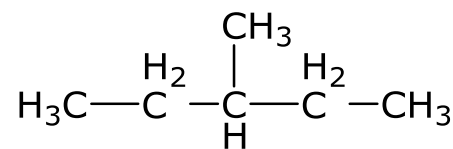
**Exemplos:**



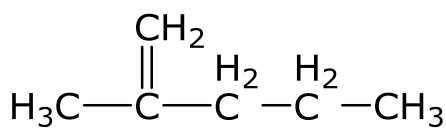
**metilpropano**



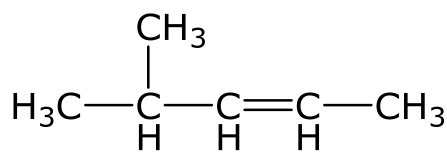
**2-metilpentano**



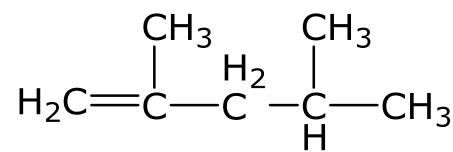
**3-metilpentano**



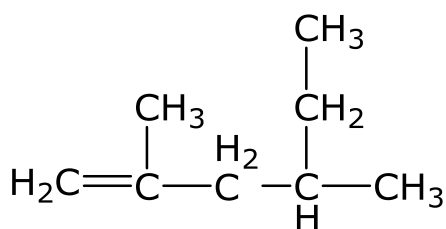
**2-metilpent-1-eno**



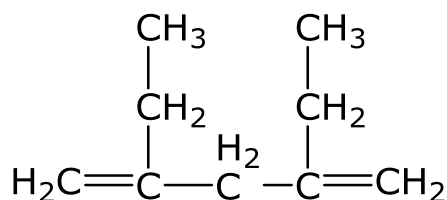
**4-metilpent-2-eno**



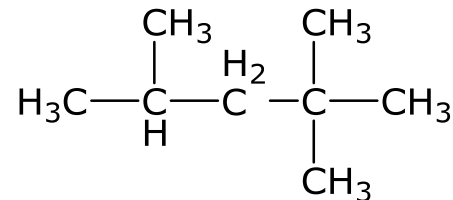
**2,4-dimetilpent-1-eno**



**2,4-dimetilhex-1-eno**



**2,4-dietilpent-1,4-dieno**

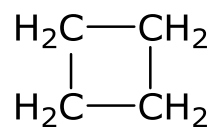


**2,2,4-trimetilpentano**

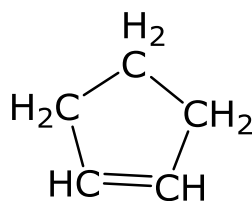
**5. Regra de nomenclatura para compostos orgânicos alicíclicos**

**CICLO + PREFIXO + INFIXO + SUFIXO**

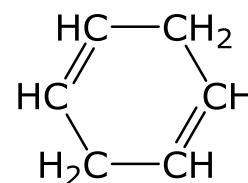
**Exemplos:**



**ciclobutano**



**ciclopenteno**



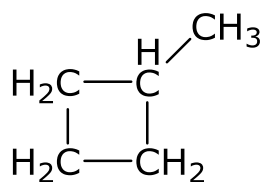
**ciclohex-1,4-dieno**

Quando houver ramificações:

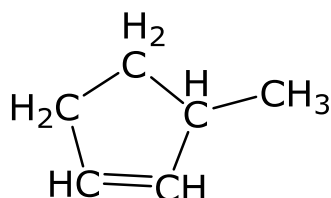
**RAMIFICAÇÃO + CICLO + PREFIXO + INFIXO + SUFIXO**

Lembrando da importância na numeração.

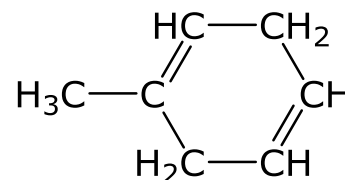
**Exemplos:**



**metilciclobutano**



**3-metilciclopenteno**

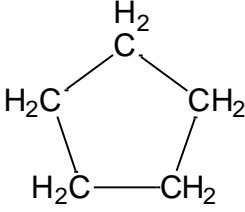
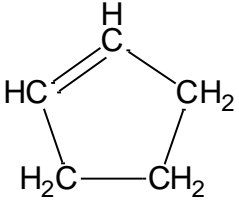
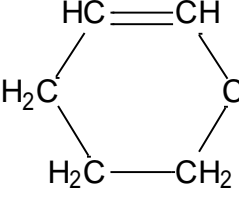
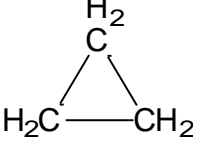
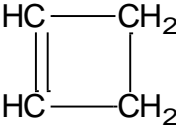
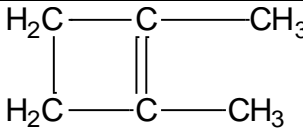
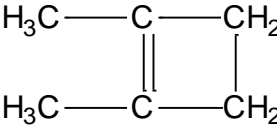
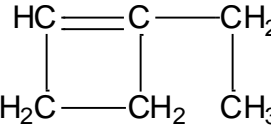
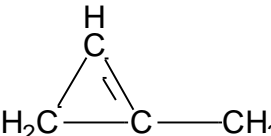
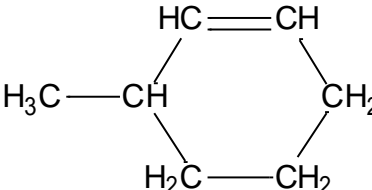
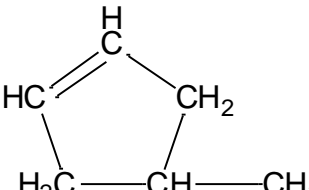
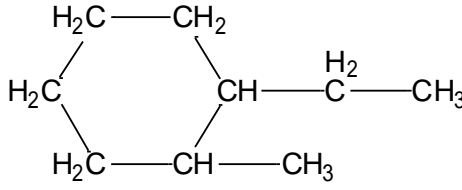
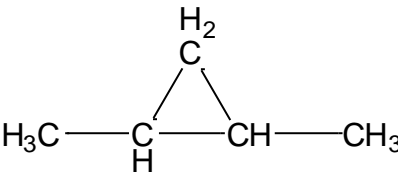
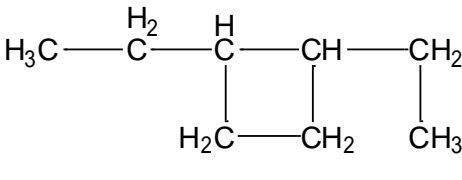
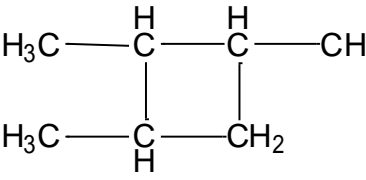
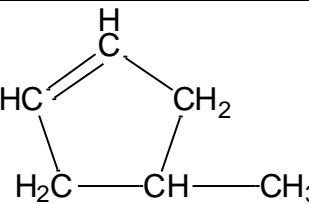
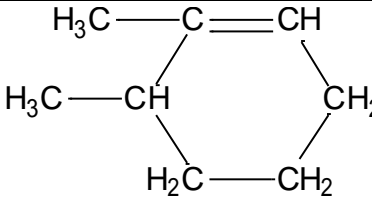
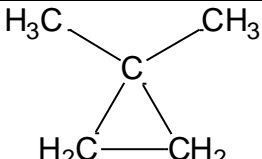
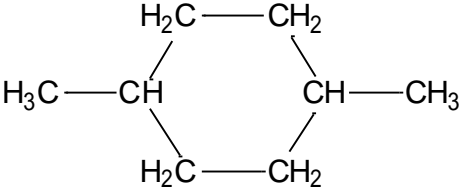
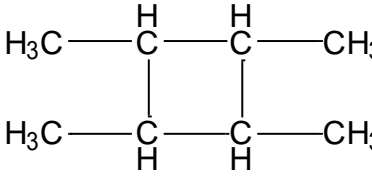
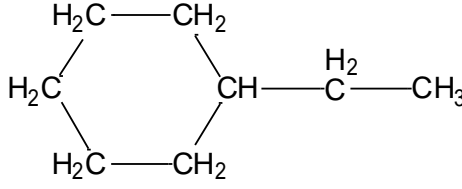
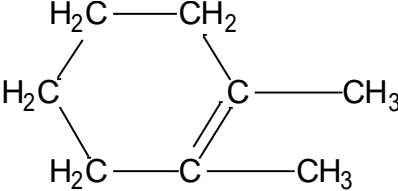
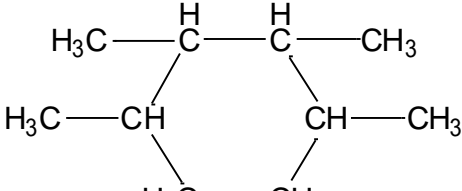
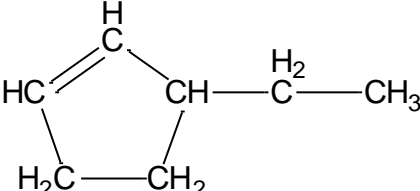


**1-metilciclohex-1,4-dieno**

Dê os nomes dos seguintes compostos orgânicos:

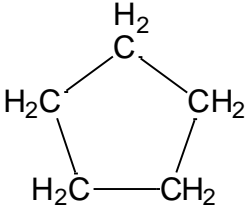
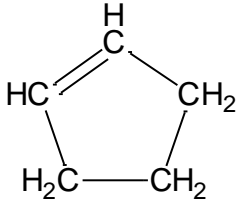
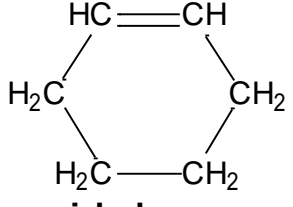
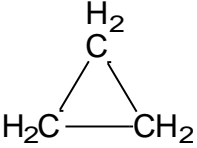
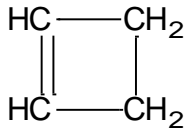
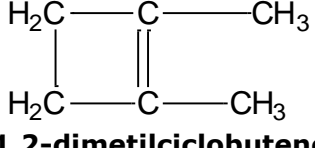
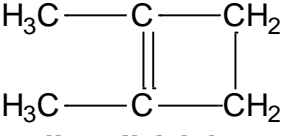
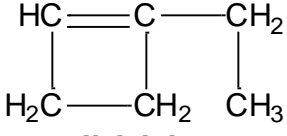
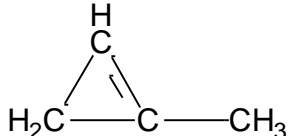
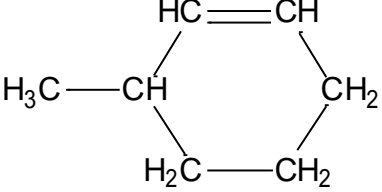
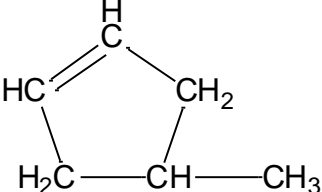
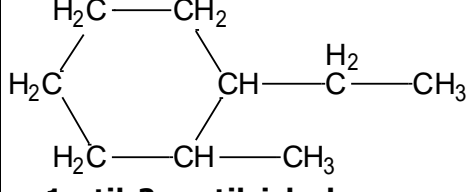
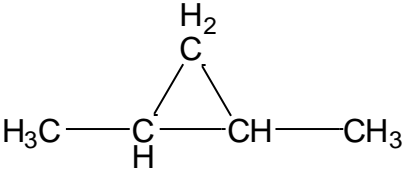
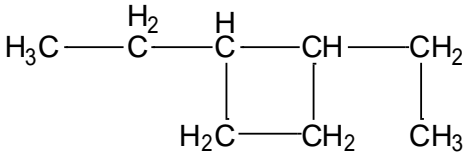
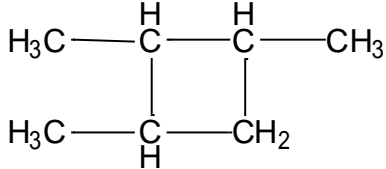
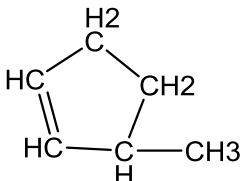
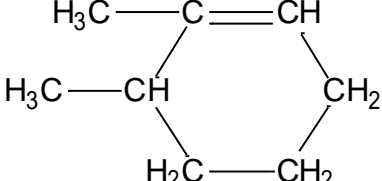
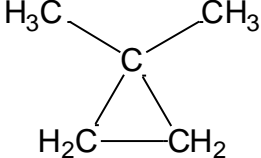
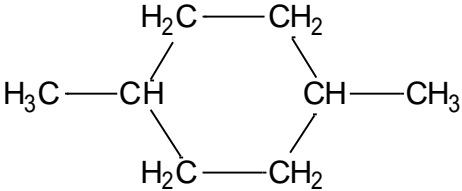
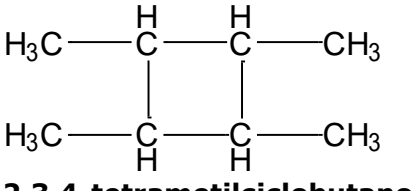
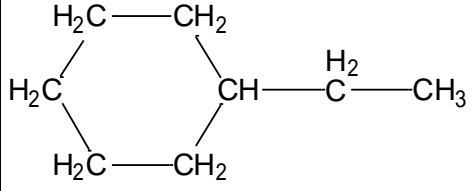
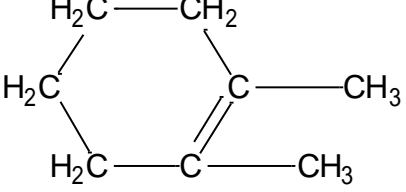
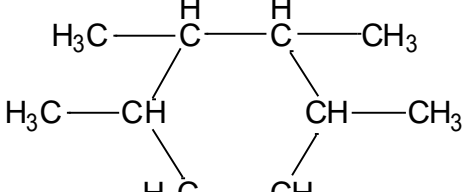
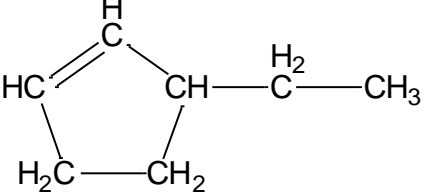
$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{H}_2 \end{array}$	$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{H} \end{array}$
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH}_2 \\   \\ \text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH} \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH} \\   \quad   \quad    \\ \text{CH}_3 \quad \text{H} \quad \text{CH}_2 \end{array}$
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}-\text{C}-\text{C}-\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}-\text{C}=\text{C}-\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_2-\text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}-\text{C}=\text{C}-\text{CH} \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$
$\begin{array}{c} \text{CH}_2-\text{CH}_3 \quad \text{CH}_2 \\   \quad   \\ \text{H}_2\text{C}-\text{C}-\text{C}-\text{C} \\   \quad   \quad    \\ \text{CH}_3 \quad \text{H}_2 \quad \text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_2\text{C}=\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_2-\text{CH}_3 \quad \text{H} \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_2-\text{CH}_3 \quad \text{H} \end{array}$
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \quad \text{CH}_3 \\   \quad   \quad   \\ \text{H}_2\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_2-\text{CH}_3 \quad \text{H} \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \end{array}$
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}=\text{C}-\text{CH}_3 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{CH}-\text{C}-\text{CH}_3 \\ \quad \quad   \\ \quad \quad \text{H}_2 \end{array}$	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}=\text{C}-\text{C}-\text{CH}_3 \\ \quad \quad   \\ \quad \quad \text{H}_2 \end{array}$
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2 \quad \text{HC}=\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{CH}_2 \quad \text{CH}_3 \end{array}$	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2 \quad \text{HC}=\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2 \quad \text{HC}=\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{H} \end{array}$

Dê os nomes dos seguintes compostos orgânicos:

$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{H}_2 \end{array}$ <p><b>2,2-dimetilbutano</b></p>	$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p><b>2,2,3-trimetilbutano</b></p>	$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{H} \end{array}$ <p><b>3,3-dimetilbuteno</b></p>
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH}_2 \\   \\ \text{CH}_3 \end{array}$ <p><b>trimetilbuteno</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH} \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p><b>3,4,4-trimetilpent-2-eno</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH} \\   \quad   \quad    \\ \text{CH}_3 \quad \text{H} \quad \text{CH}_2 \end{array}$ <p><b>3,4,4-trimetilpent-1-eno</b></p>
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}-\text{C}-\text{C}-\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p><b>3,4-dimetil-hexano</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}-\text{C}=\text{C}-\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p><b>3,4-dimetil-hex-3-eno</b></p>	$\begin{array}{c} \text{CH}_2-\text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_2\text{C}-\text{C}=\text{C}-\text{CH} \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p><b>2,4-dimetil-hep-3-eno</b></p>
$\begin{array}{c} \text{CH}_2-\text{CH}_3 \quad \text{CH}_2 \\   \quad   \\ \text{H}_2\text{C}-\text{C}-\text{C}-\text{C} \\   \quad   \quad    \\ \text{CH}_3 \quad \text{H}_2 \quad \text{CH}_3 \end{array}$ <p><b>2,4-dimetil-hep-1-eno</b></p>	$\begin{array}{c} \text{CH}_3 \\   \\ \text{H}_2\text{C}=\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{CH}_2-\text{CH}_3 \end{array}$ <p><b>2-etil-3-metilbut-1-eno</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{CH}_2-\text{CH}_3 \end{array}$ <p><b>2,3,3-trimetilpentano</b></p>
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \quad \text{CH}_3 \\   \quad   \quad   \\ \text{H}_2\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{CH}_2-\text{CH}_3 \end{array}$ <p><b>3-etil-2,2-dimetilpentano</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \end{array}$ <p><b>2,3,3,4-tetrametilpentano</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}=\text{CH}_2 \\   \\ \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \end{array}$ <p><b>2,3,3,4-tetrametilpent-1-eno</b></p>
$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{H}_2\text{C}=\text{C}-\text{CH}_3 \end{array}$ <p><b>2,3,3,4-tetrametilpent-1-eno</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{CH}-\text{C}-\text{CH}_3 \\ \quad \quad   \\ \quad \quad \text{H}_2 \end{array}$ <p><b>2,3,3,4-tetrametil-hexano</b></p>	$\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{H}_2\text{C}=\text{C}-\text{C}-\text{CH}_3 \\ \quad \quad   \\ \quad \quad \text{H}_2 \end{array}$ <p><b>2-etil-3,3,4-trimetilpentano</b></p>
$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2 \quad \text{HC}=\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{CH}_2 \quad \text{CH}_3 \end{array}$ <p><b>3,4-dietil-4-metil-hex-1-eno</b></p>	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2 \quad \text{HC}=\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_2 \\   \quad   \\ \text{CH}_3 \quad \text{CH}_3 \end{array}$ <p><b>3-etil-4,4-dimetil-hex-1-eno</b></p>	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2 \quad \text{HC}=\text{CH}_2 \\   \quad   \\ \text{H}_3\text{C}-\text{C}-\text{C}-\text{CH}_3 \\   \\ \text{CH}_3 \end{array}$ <p><b>3,4,4-trimetil-hex-1-eno</b></p>



 <p><b>ciclopentano</b></p>	 <p><b>ciclopenteno</b></p>	 <p><b>ciclo-hexeno</b></p>
 <p><b>ciclopropano</b></p>	 <p><b>ciclobuteno</b></p>	 <p><b>1,2-dimetilciclobuteno</b></p>
 <p><b>1,2-dimetilciclobuteno</b></p>	 <p><b>1-etilciclobuteno</b></p>	 <p><b>1-metilciclopropano</b></p>
 <p><b>3-metilciclo-hexeno</b></p>	 <p><b>4-metilciclopenteno</b></p>	 <p><b>1-etil-2-metilciclo-hexano</b></p>
 <p><b>1,2-dimetilciclopropano</b></p>	 <p><b>1,2-dietilciclobutano</b></p>	 <p><b>1,2,3-trimetilciclobutano</b></p>
 <p><b>3-metilciclopenteno</b></p>	 <p><b>2,3-dimetilciclo-hexeno</b></p>	 <p><b>1,1-dimetilciclopropano</b></p>
 <p><b>1,4-dimetilciclo-hexano</b></p>	 <p><b>1,2,3,4-tetrametilciclobutano</b></p>	 <p><b>etilciclo-hexano</b></p>
 <p><b>1,2-dimetilciclo-hexeno</b></p>	 <p><b>1,2,3,4-tetrametilciclo-hexano</b></p>	 <p><b>3-etilciclopenteno</b></p>