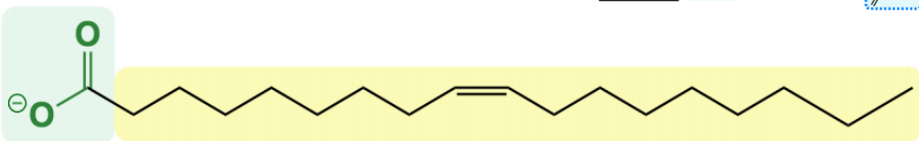


CONCEPT: FATTY ACID NOMENCLATURE

Several Fatty Acid Nomenclature Systems

- *Common Name*: Oleic Acid.
- *Systematic Name*: 9-Octadecenoic Acid.
- _____ *Name*: 18:1 Δ_9



Shorthand Naming of Fatty Acids

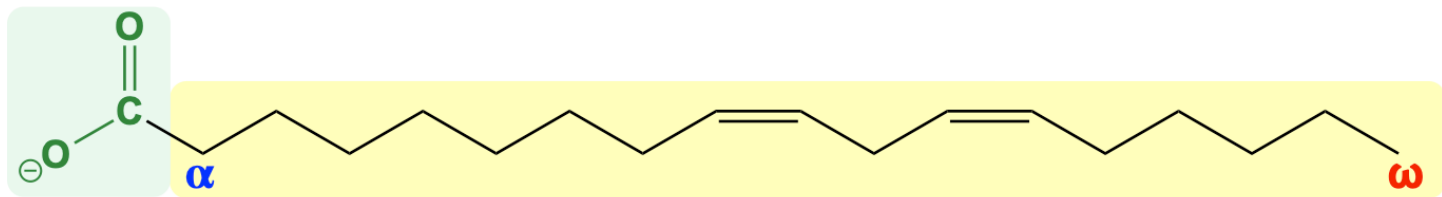
- Fatty acids can be assigned shorthand names using the following _____-step process.

- 1) Count the *total* # of _____ atoms in the fatty acid.
- 2) Count the *total* # of _____ bonds in the fatty acid (if any).
- 3) Separate the 1st and 2nd #'s by a _____ (# of carbon atoms : # of double bonds).

If necessary → 4) Indicate *presence & location* of any double bonds with a *superscript* on the Greek letter _____ (Δ).

□ *Superscript* indicates the _____ numbered carbon forming *each* double bond.

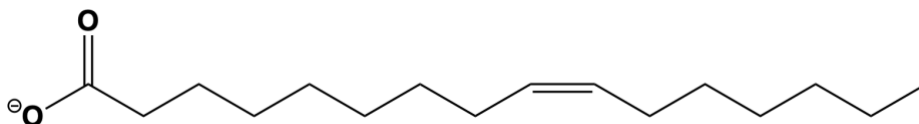
EXAMPLE: Provide the shorthand name for the following fatty acid.



____:____(Δ ____) **Linoleic Acid**

PRACTICE: What is the shorthand name for the fatty acid shown below?

- 16:1 (Δ_7) Palmitoleic acid.
- 16:1 (Δ_9) Palmitoleic acid.
- 18:1 (Δ_9) Palmitoleic acid.
- 16:0 (Δ_9) Palmitoleic acid.
- 16:1 (Δ_{10}) Palmitoleic acid.



PRACTICE: Arrange the following fatty acids from lowest → highest melting point: 18:1 Δ_9 ; 18:0; 18:3 $\Delta_{9,12,15}$; 18:2 $\Delta_{9,12}$

- 18:3 $\Delta_{9,12,15}$; 18:2 $\Delta_{9,12}$; 18:1 Δ_9 ; 18:0
- 18:0; 18:3 $\Delta_{9,12,15}$; 18:2 $\Delta_{9,12}$; 18:1 Δ_9
- 18:1 Δ_9 ; 18:0; 18:3 $\Delta_{9,12,15}$; 18:2 $\Delta_{9,12}$
- 18:0; 18:1 Δ_9 ; 18:2 $\Delta_{9,12}$; 18:3 $\Delta_{9,12,15}$

CONCEPT: FATTY ACID NOMENCLATURE

PRACTICE: Use the provided shorthand name to draw the structure of the fatty acid myristate (14:0).



PRACTICE: Draw the structure of the fatty acid 24:2 Δ _{5,9}.

