



GEOMETRÍA

Capítulo 4

3th

SECONDARY

RECTAS PARALELAS



 **SACO OLIVEROS**

MOTIVATING | STRATEGY



ÁNGULOS ENTRE DOS RECTAS PARALELAS Y UNA SECANTE

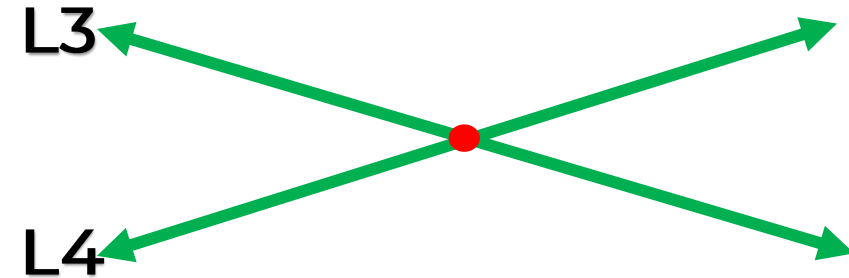
RECTAS PARALELAS : Son aquellas rectas coplanales que no tienen ningún punto en común.

Rectas paralelas

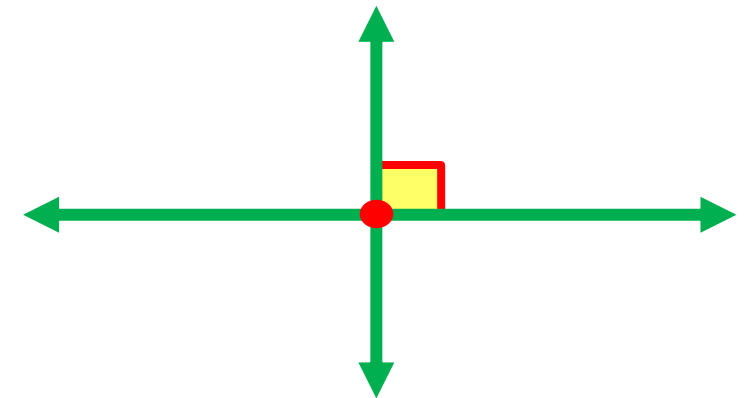


$L1 \parallel L2$

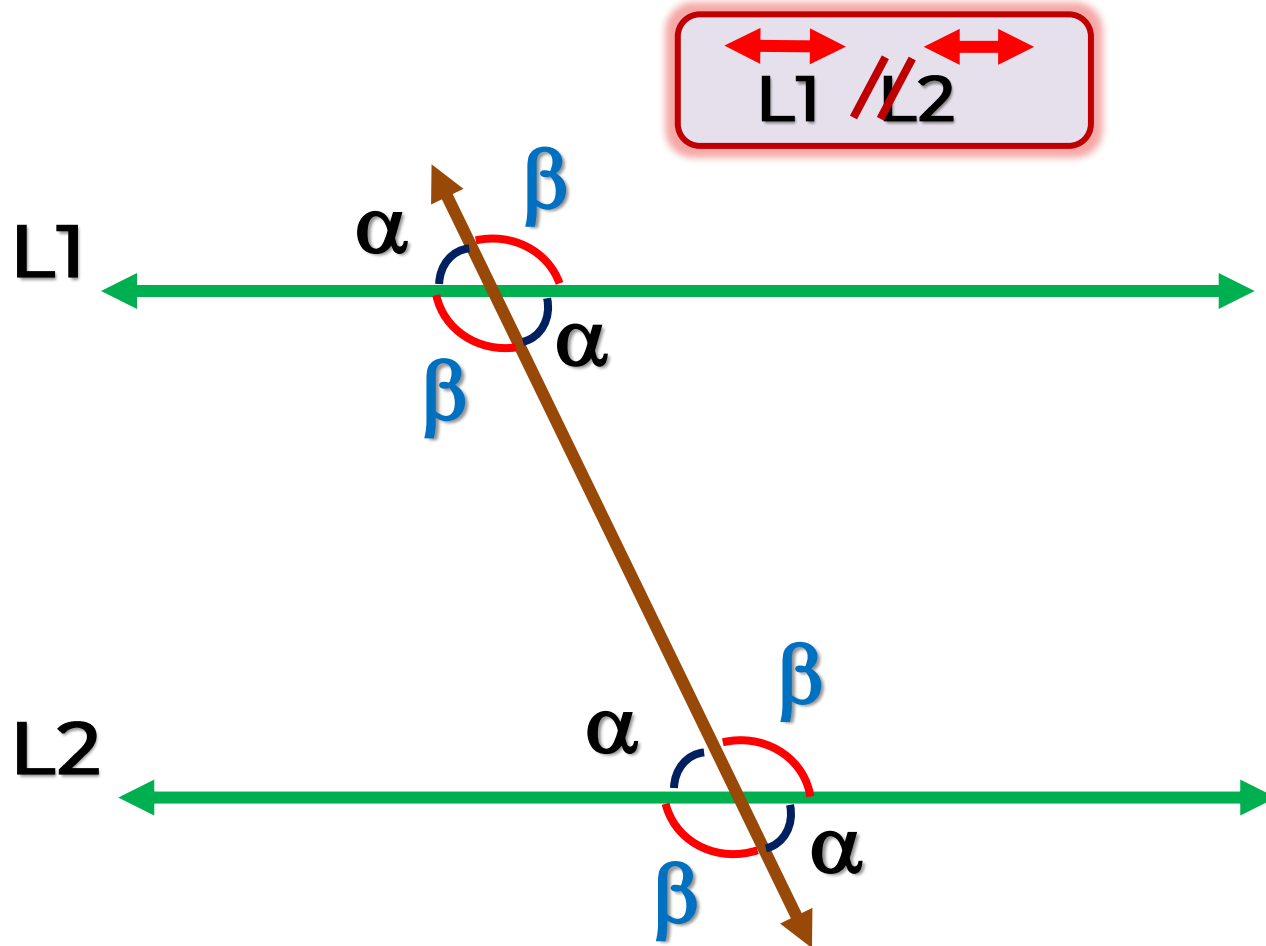
Rectas Secantes



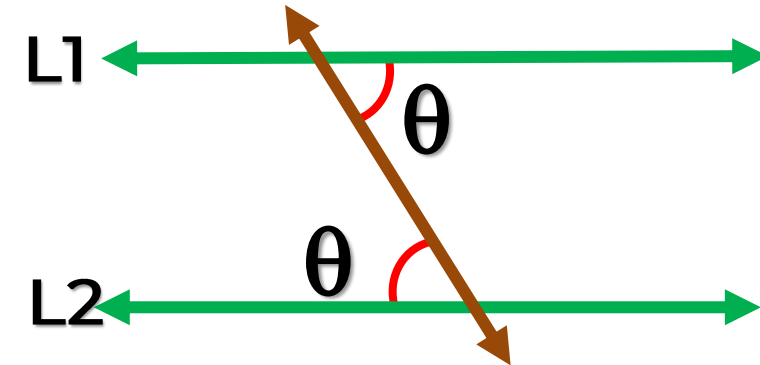
Rectas Perpendiculares



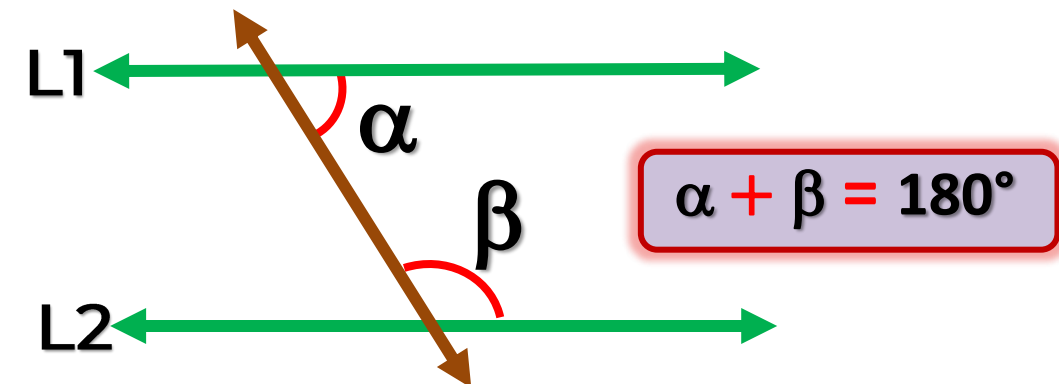
ÁNGULOS FORMADOS POR DOS RECTAS PARALELAS Y UNA SECANTE



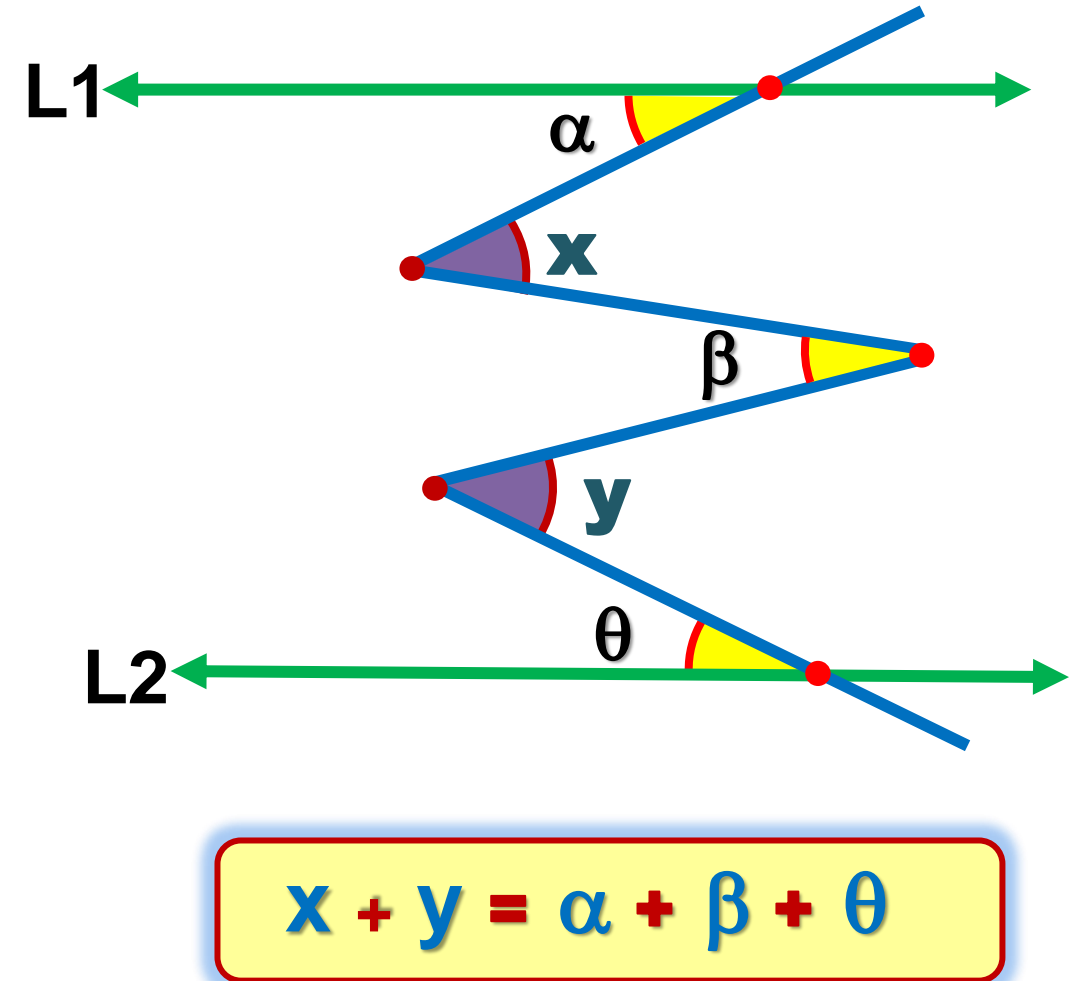
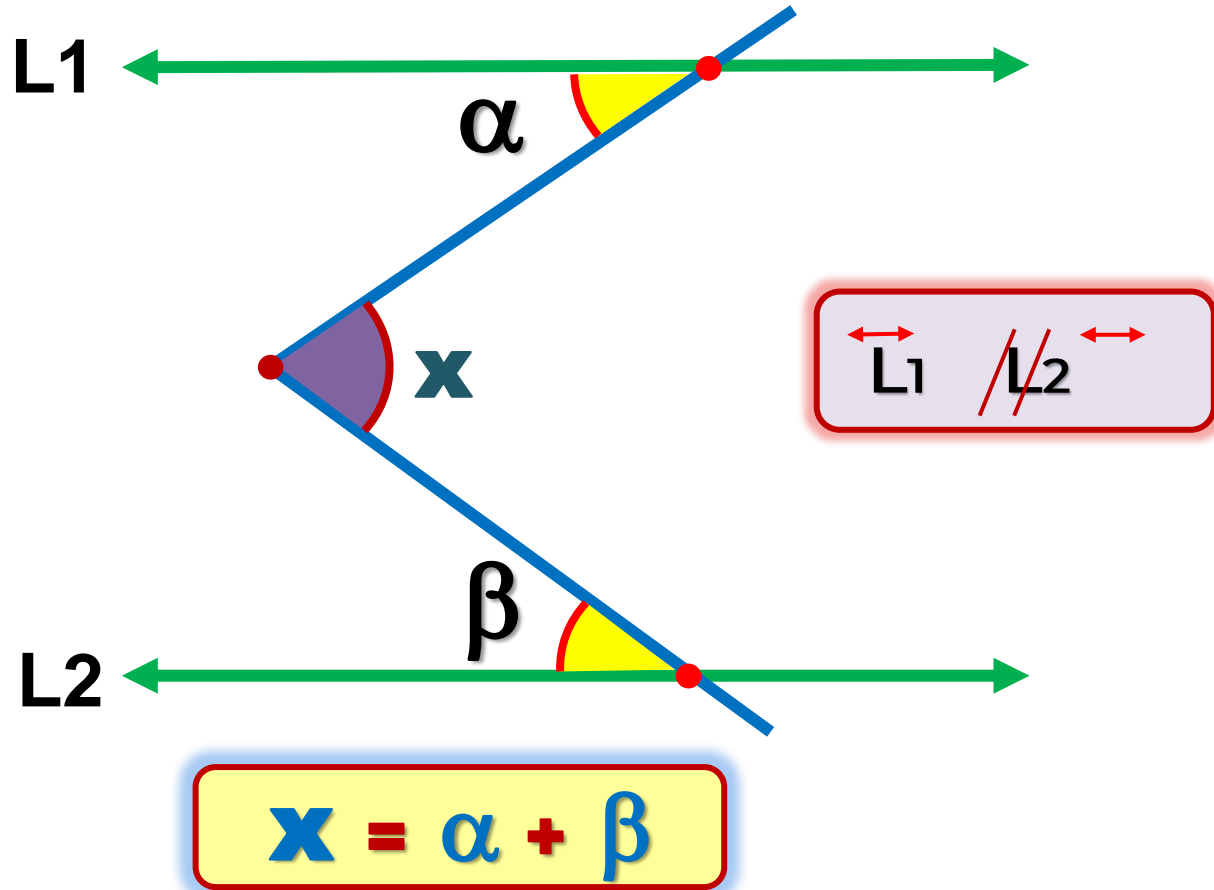
ÁNGULOS ALTERNOS INTERNOS



ÁNGULOS CONJUGADOS

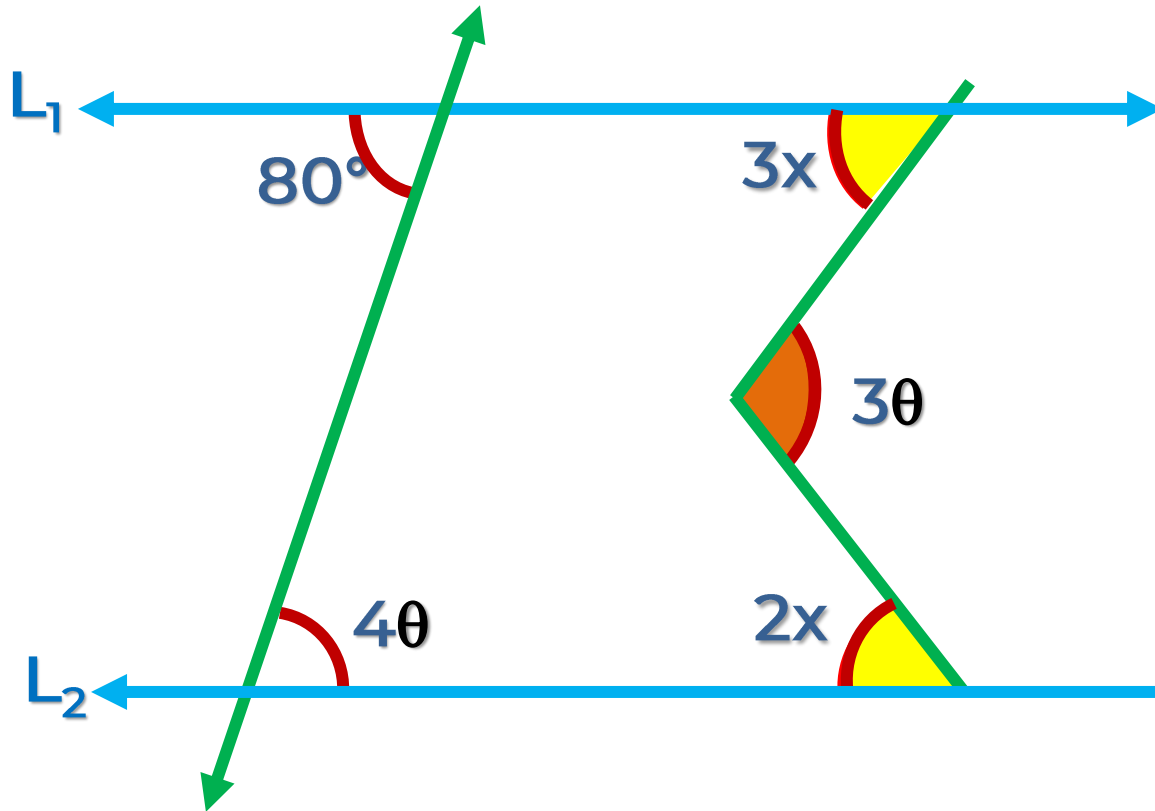


TEOREMAS



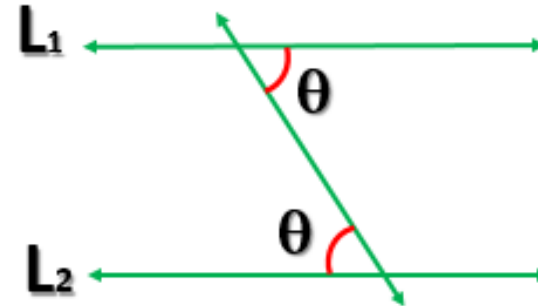


1. Si $L_1 \parallel L_2$, halle el valor de x .



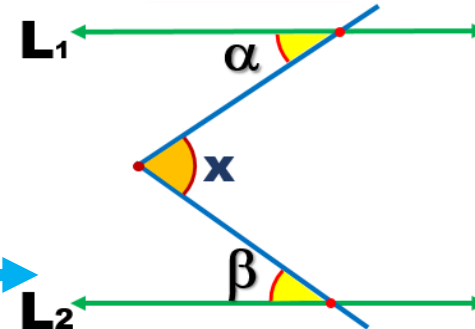
RESOLUCIÓN

Ángulos alternos internos



$$4\theta = 80^\circ$$

$$\theta = 20^\circ$$



$$3x + 2x = 3\theta$$

$$5x = 3(20^\circ)$$

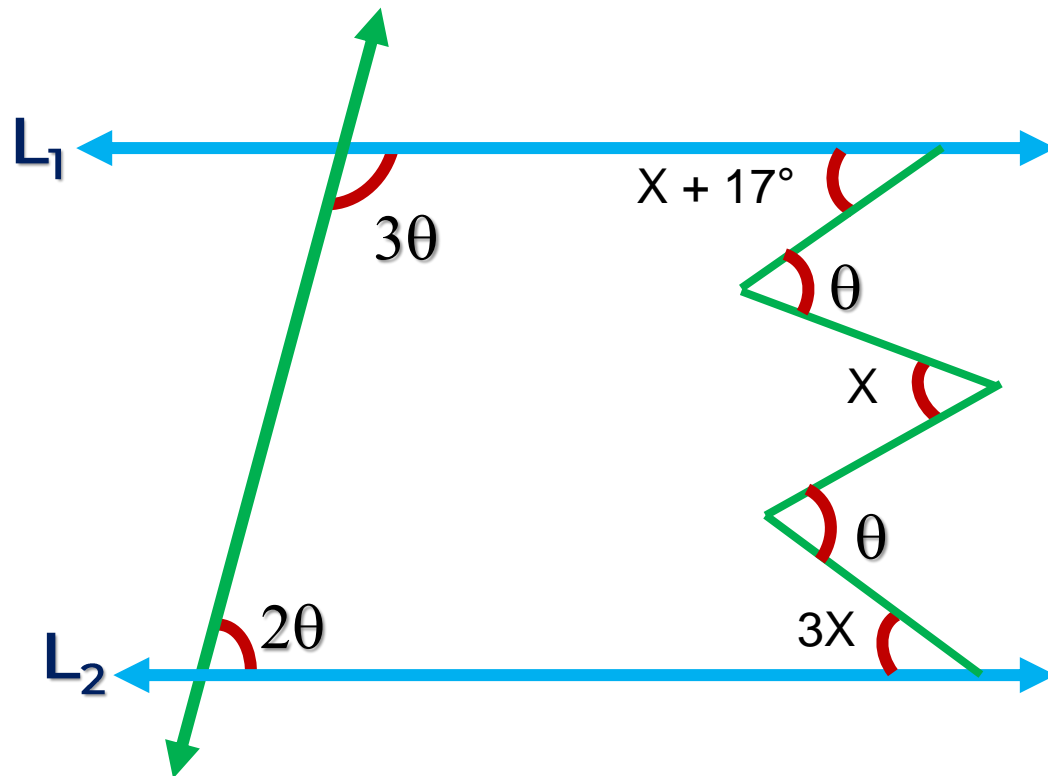
$$5x = 60^\circ$$

$$\alpha + \beta = x$$

$$x = 12^\circ$$

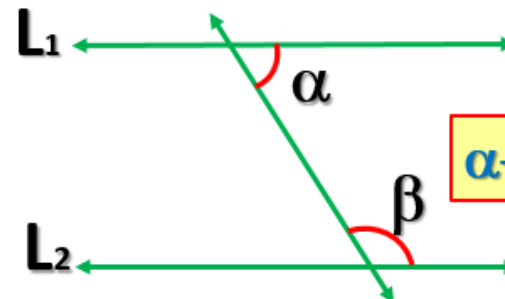


2. En la figura, $L_1 \parallel L_2$. Halle el valor de X.



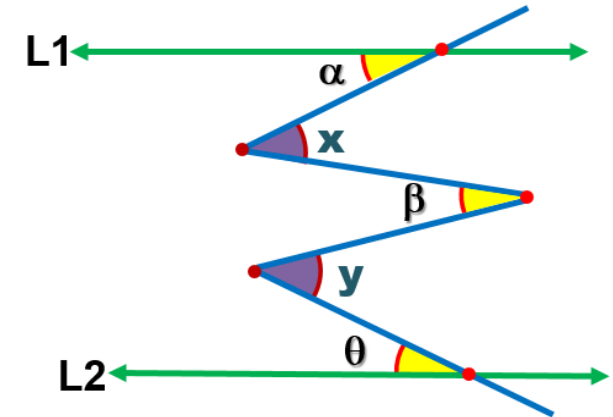
RESOLUCIÓN

Ángulos conjugados



$$\alpha + \beta = 180^\circ$$

$$\begin{aligned} 3\theta + 2\theta &= 180^\circ \\ 5\theta &= 180^\circ \\ \theta &= 36^\circ \end{aligned}$$



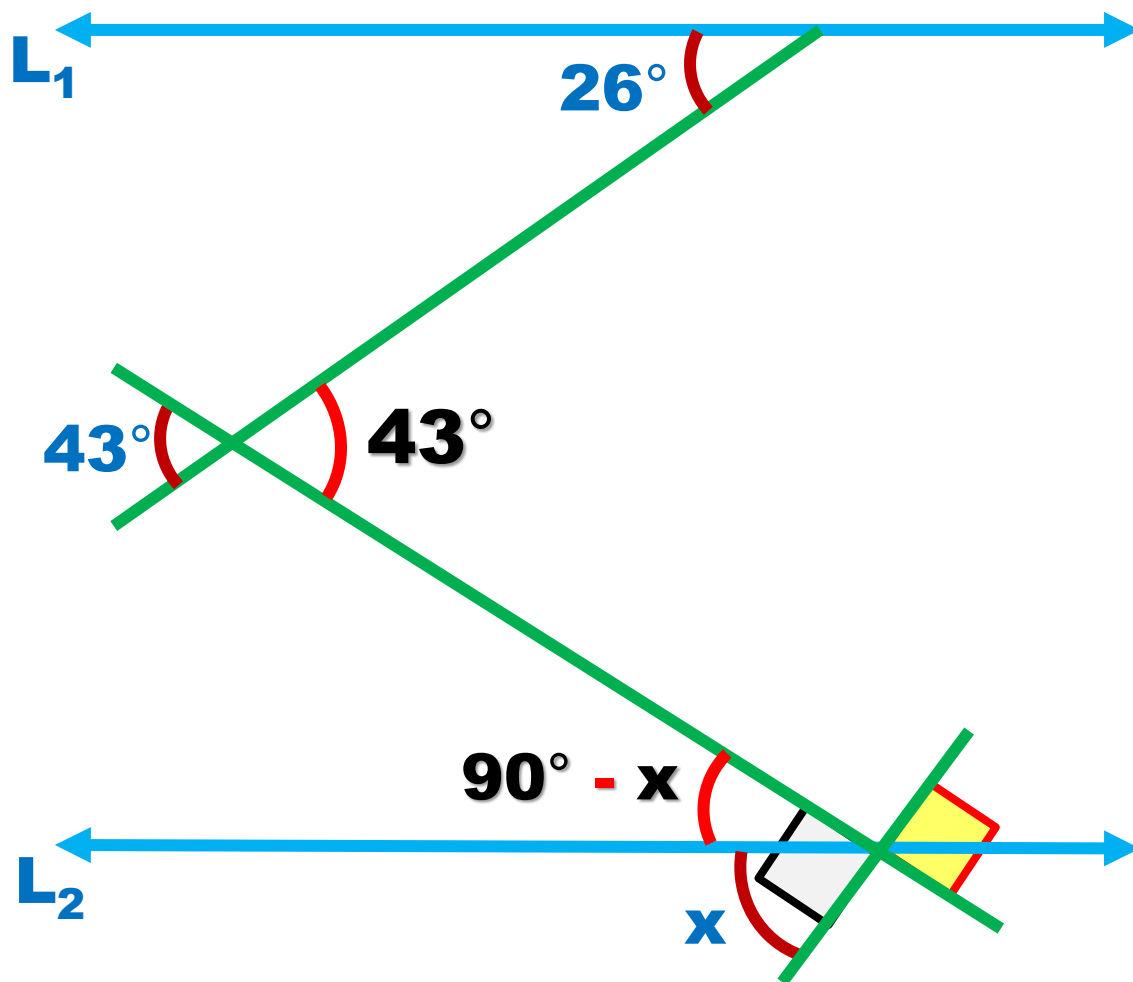
$$x + y = \alpha + \beta + \theta$$

$$\begin{aligned} x + 17 + x + 3x &= \theta + \theta \\ 5x + 17 &= 2\theta \\ 5x &= 2(36) - 17 \end{aligned}$$

$$x = 11^\circ$$

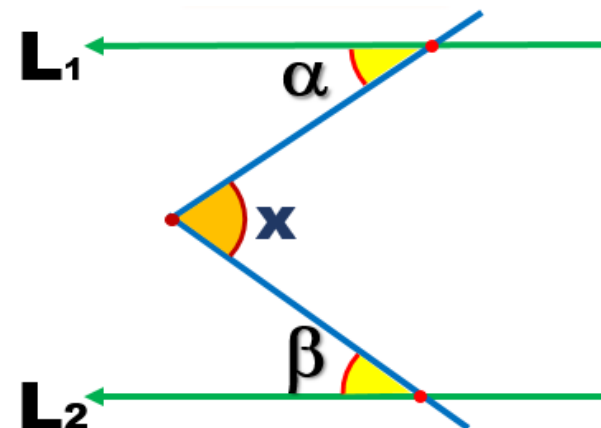


3. Si $L_1 \parallel L_2$, halle el valor de x .



RESOLUCIÓN

RECORDAR



$$\alpha + \beta = x$$

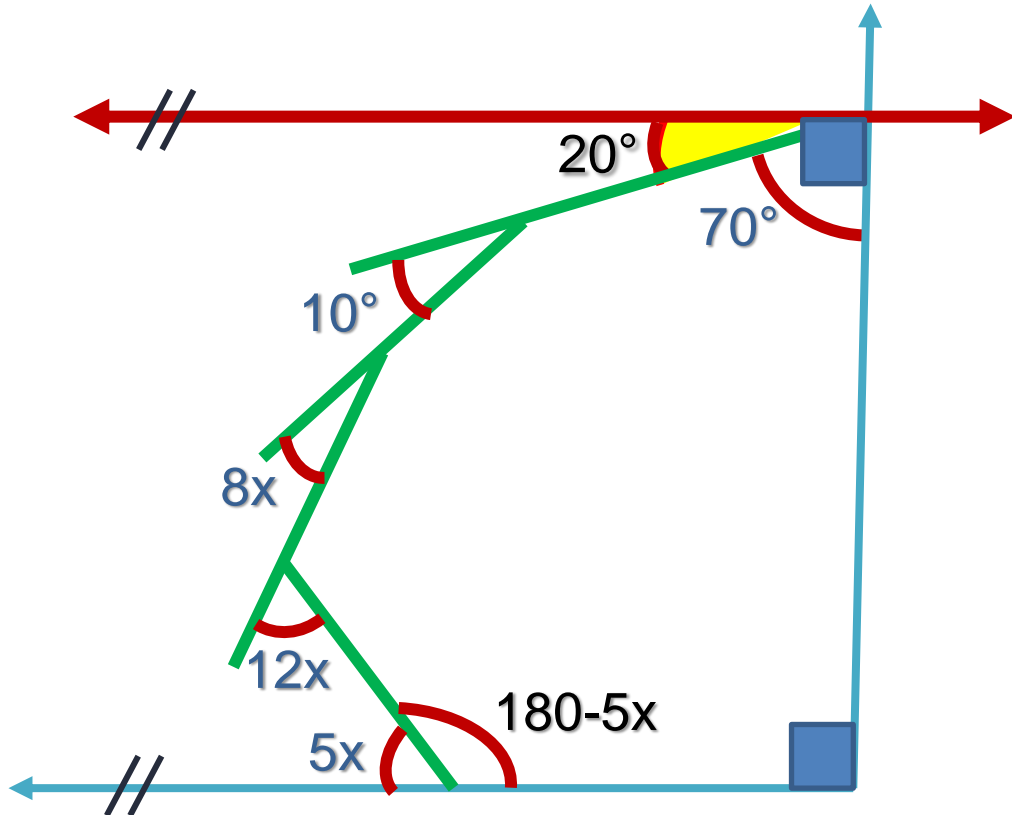
$$26^\circ + 90^\circ - x = 43^\circ$$

$$116^\circ - x = 43^\circ$$

$$x = 73^\circ$$



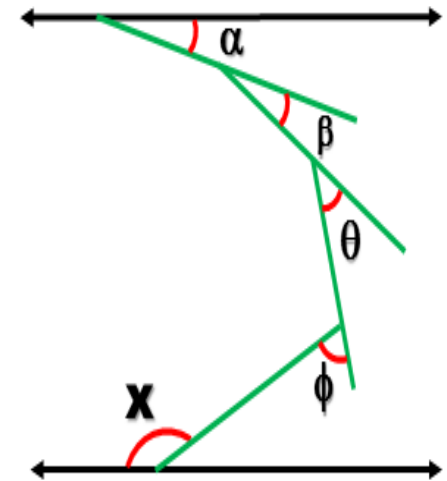
4. Halle el valor de x .



RESOLUCIÓN

RECORDAR

$$x = \alpha + \beta + \theta + \phi$$



$$20^\circ + 10^\circ + 8x + 12x = 180^\circ - 5x$$

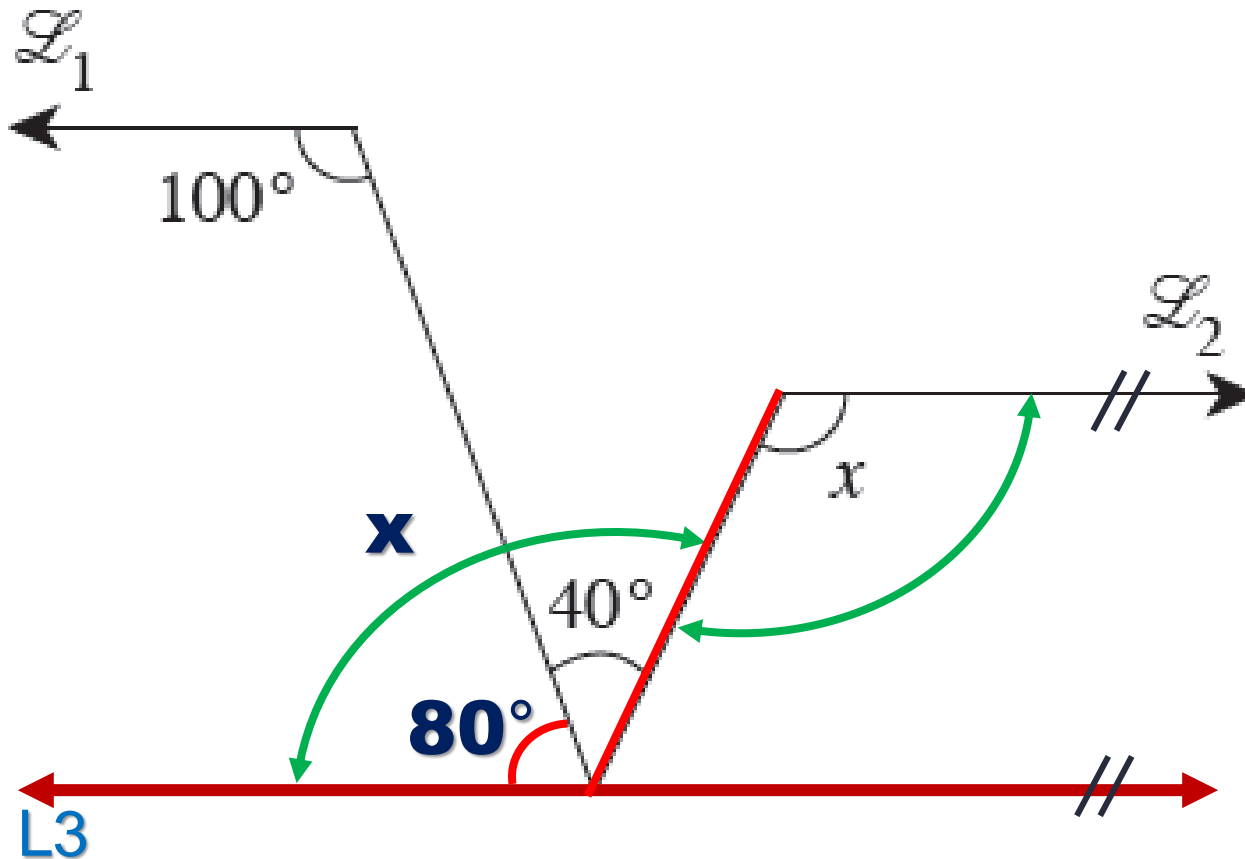
$$25x = 150^\circ$$

$$x = 6^\circ$$

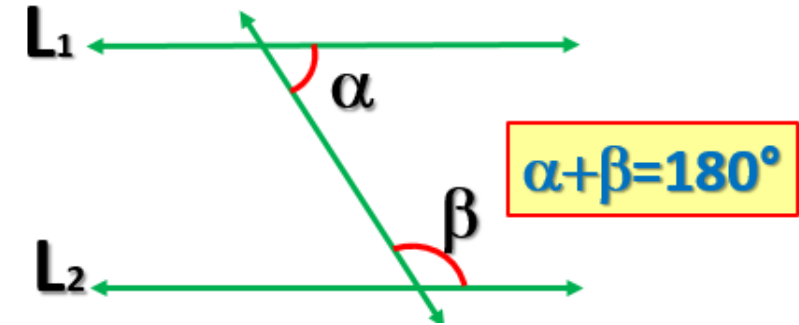


5. Si $L_1 \parallel L_2$, halle el valor de x .

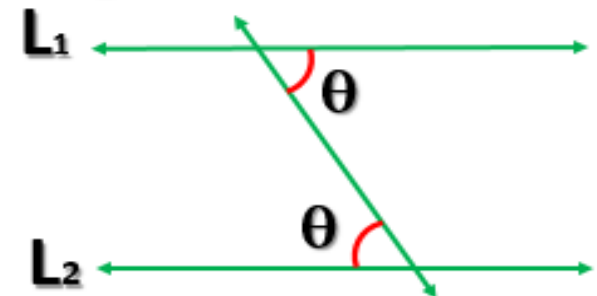
RESOLUCIÓN



Ángulos conjugados



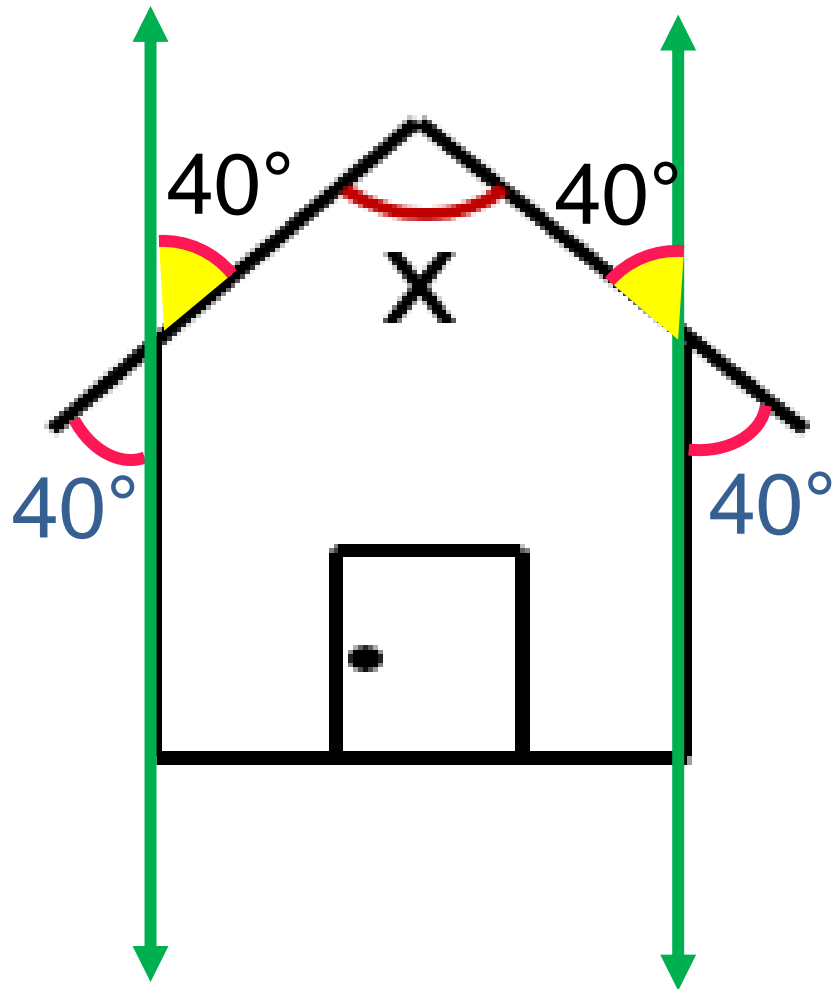
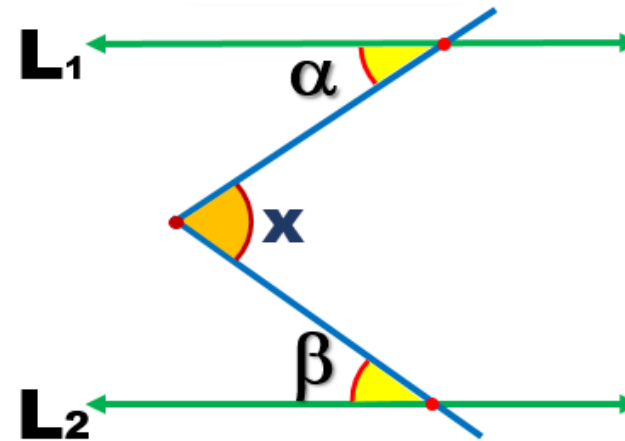
Ángulos alternos internos



$$x = 80^\circ + 40^\circ$$

$$x = 120^\circ$$

6. En la figura se muestra el frontis de una casa. Si el techo forma ángulos iguales a 40° con las paredes laterales, halle la medida del ángulo que forman dichos techos.

**RESOLUCIÓN**

RECORDAR

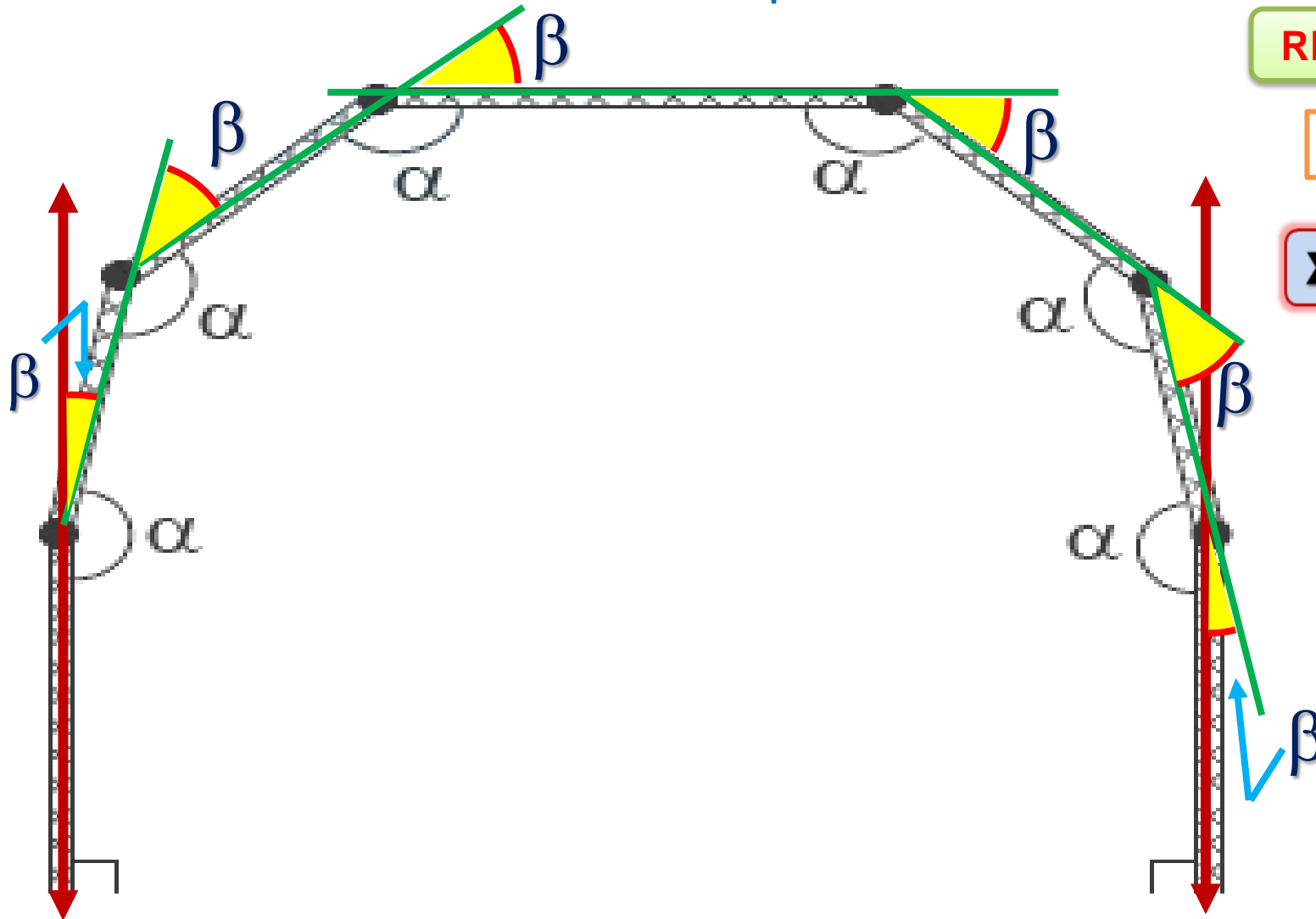
$$x = \alpha + \beta$$

$$x = 40^\circ + 40^\circ$$

$$x = 80^\circ$$



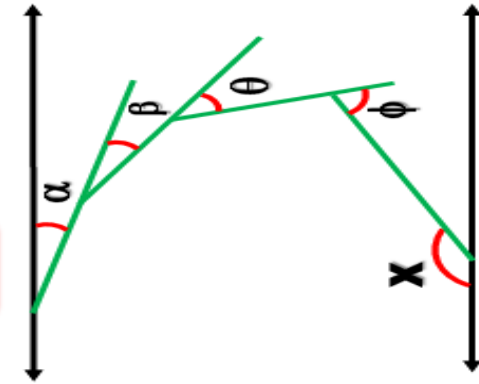
7. La figura representa el corte transversal de la estructura del techo de un depósito de mercancías. Halle el valor de a para construir dicho techo.



RESOLUCIÓN

RECORDAR

$$x = \alpha + \beta + \theta + \phi$$



$$\alpha = \beta + \beta + \beta + \beta + \beta$$

$$\alpha = 5\beta$$

$$\beta + \alpha = 180^\circ$$

$$\downarrow$$

$$5\beta$$

$$6\beta = 180^\circ$$

$$\beta = 30^\circ$$

Nos piden

$$\alpha = 5(30^\circ)$$

$$\alpha = 150^\circ$$