



Materiales Educativos GRATIS

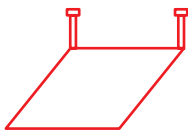
GEOMETRIA

SEGUNDO

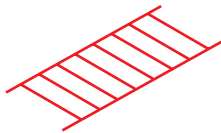
PROPIEDADES ENTRE RECTAS PARALELAS

Marco teórico

Dos columnas de una casa nos dan la idea de rectas paralelas.

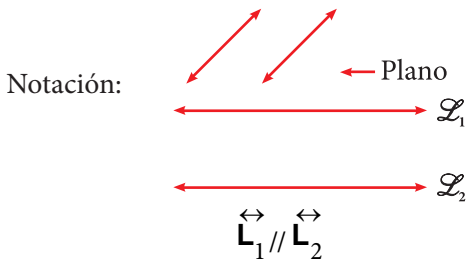


Los rieles del ferrocarril también nos da la idea de rectas paralelas.



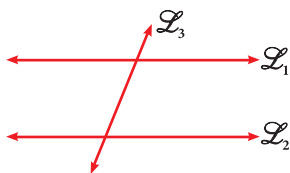
Rectas paralelas

Son aquellas rectas que pertenecen a un mismo plano y que, al prolongarlas, no tendrían punto de contacto.



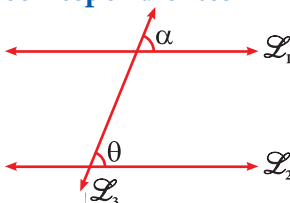
Notación: Se lee, recta L_1 paralela a la recta L_2 .

Nota:



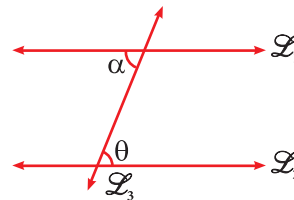
L_3 : Recta transversal o secante

1. Ángulos correspondientes



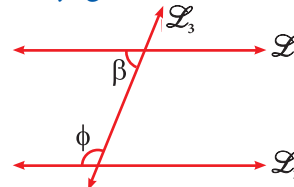
Si $\vec{L}_1 // \vec{L}_2 \Rightarrow \alpha = \theta$

2. Ángulos alternos internos



Si $\vec{L}_1 // \vec{L}_2 \Rightarrow \alpha = \theta$

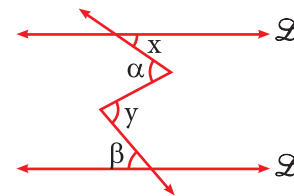
3. Ángulos conjugados internos



Si $\vec{L}_1 // \vec{L}_2 \Rightarrow \beta + \phi = 180^\circ$

Propiedades entre rectas paralelas

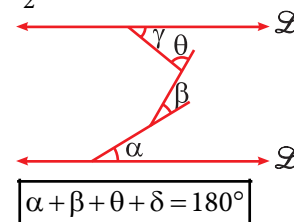
1.



Si $\vec{L}_1 // \vec{L}_2$ $x + y = \alpha + \beta$

Suma de las medidas de los ángulos que van a la derecha = Suma de las medidas de los ángulos que van a la izquierda

2. Si $\vec{L}_1 // \vec{L}_2$

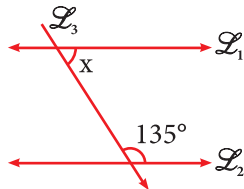


$\alpha + \beta + \theta + \delta = 180^\circ$

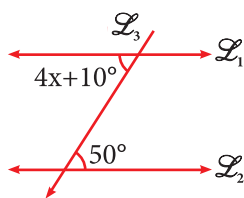
Trabajando en Clase

Integral

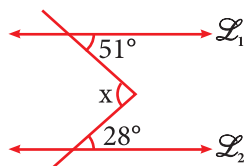
1. Calcula "x", si: $\vec{L}_1 // \vec{L}_2$.



2. Calcula "x", si: $\vec{L}_1 // \vec{L}_2$.

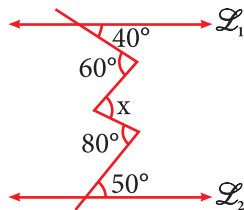


3. Dada el gráfico, calcula "x", si: $\vec{L}_1 // \vec{L}_2$.



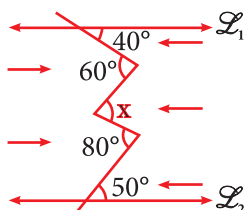
Católica

4. Calcula "x", si: $\vec{L}_1 // \vec{L}_2$.



Resolución:

En la figura, por la propiedad del serrucho.



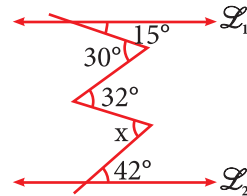
Suma de las medidas de los ángulos por la derecha =
Suma de las medidas de los ángulos por la izquierda
 $40^\circ + x + 50^\circ = 60^\circ + 80^\circ$

$$x + 90^\circ = 140^\circ$$

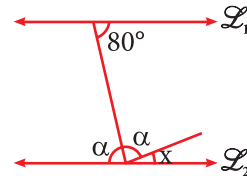
$$x = 140^\circ - 90^\circ$$

$$x = 50^\circ$$

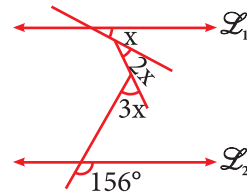
5. Calcula "x", si: $\vec{L}_1 // \vec{L}_2$.



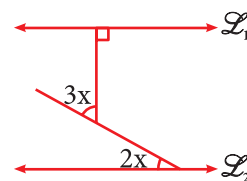
6. Calcula "x", si: $\vec{L}_1 // \vec{L}_2$.



7. Calcula "x", si: $\vec{L}_1 // \vec{L}_2$.

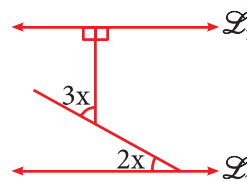


8. Calcula "x", si $\vec{L}_1 // \vec{L}_2$.



Resolución:

❖ En la figura por propiedad.



❖ Suma de las medidas de los ángulos externos = 180°

$$90^\circ + 3x + 2x = 180^\circ$$

$$90^\circ + 5x = 180^\circ$$

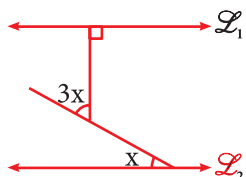
$$5x = 180^\circ - 90^\circ$$

$$5x = 90^\circ$$

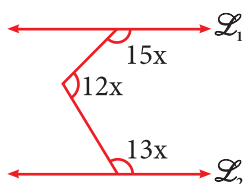
$$x = 18^\circ$$

❖ Nos piden $x = 18^\circ$

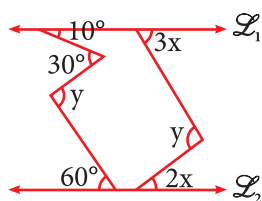
9. Calcula "x", si: $\overleftrightarrow{L_1} // \overleftrightarrow{L_2}$.



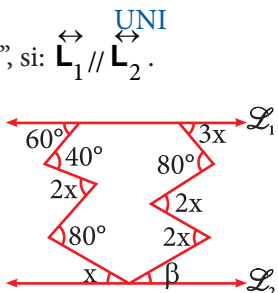
10. Calcula "x", si: $\overleftrightarrow{L_1} // \overleftrightarrow{L_2}$.



11. Calcula "x", si: $\overleftrightarrow{L_1} // \overleftrightarrow{L_2}$.

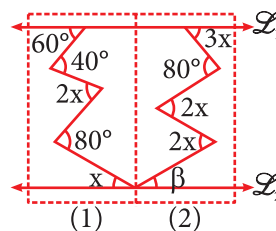


12. Calcula "β", si: $\overleftrightarrow{L_1} // \overleftrightarrow{L_2}$.



Resolución:

❖ En la figura por la propiedad del serrucho (2 veces)



En (1):

$$40^\circ + 80^\circ = 60^\circ + 2x + x$$

$$120^\circ = 60^\circ + 3x$$

$$120^\circ - 60^\circ = 3x$$

$$60^\circ = 3x$$

$$x = 20^\circ$$

En (2):

$$3x + 2x + \beta = 80^\circ + 2x$$

$$3x + \beta = 80^\circ$$

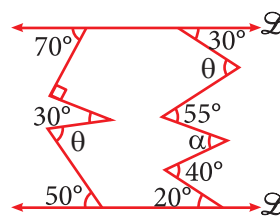
$$3(20^\circ) + \beta = 80^\circ; \text{reemplazando } x=20^\circ$$

$$60^\circ + \beta = 80^\circ$$

$$\beta = 20^\circ$$

❖ Nos piden: $\beta = 20$

13. Si: $\overleftrightarrow{L_1} // \overleftrightarrow{L_2}$, calcula "α".



14. Si: $\overleftrightarrow{L_1} // \overleftrightarrow{L_2}$, calcula "x".

