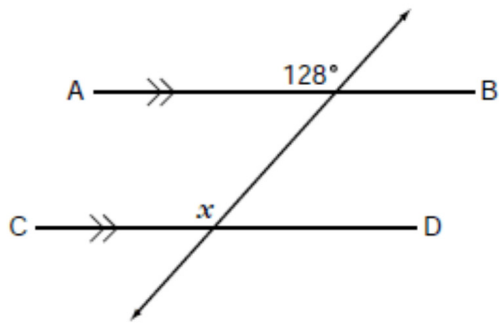


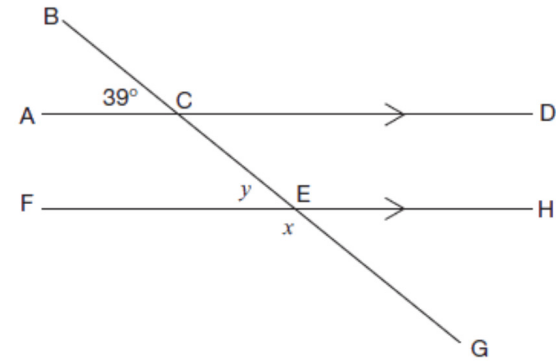
In the figure, AB is parallel to CD.



What is the value of x ?

- a 38°
- b 52°
- c 62°
- d 128°

The measure of $\angle ACB$ is 39° .

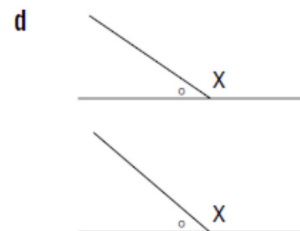
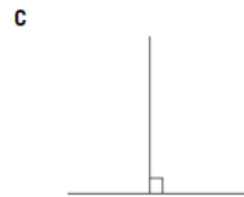
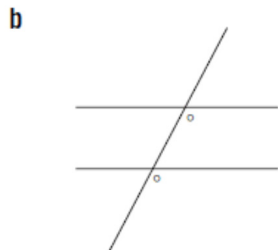
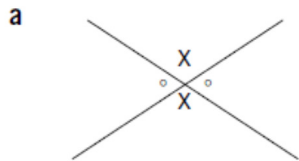


What are the values of x and y ?

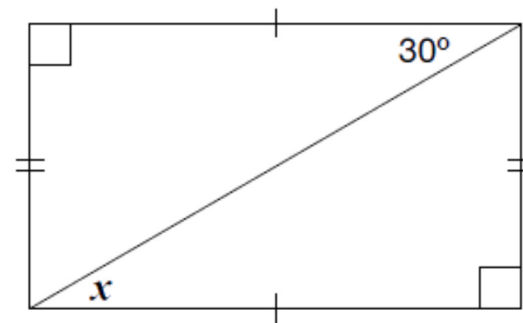
- a $x = 39^\circ$ and $y = 141^\circ$
- b $x = 39^\circ$ and $y = 39^\circ$
- c $x = 141^\circ$ and $y = 141^\circ$
- d $x = 141^\circ$ and $y = 39^\circ$

“When two lines intersect, the opposite angles are equal.”

Which of the diagrams illustrates the above statement?



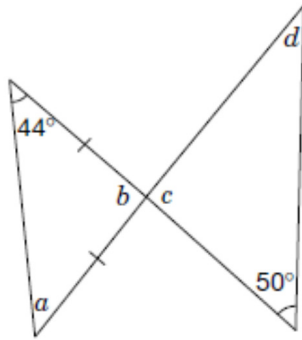
Consider the diagram below.



What is the value of x in the diagram?

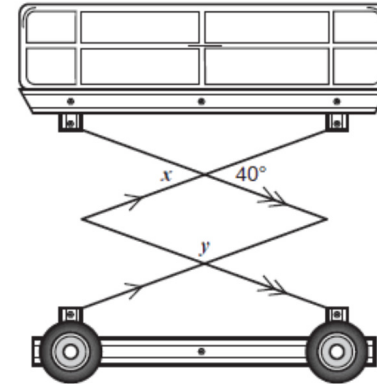
- a 150°
- b 90°
- c 60°
- d 30°

What is the **sum** of the measures of angles a , b , c and d ?



- a 136°
- b 166°
- c 180°
- d 266°

A custodian uses a lift to change light bulbs in the gym. A cross-section of the lift is shown below.

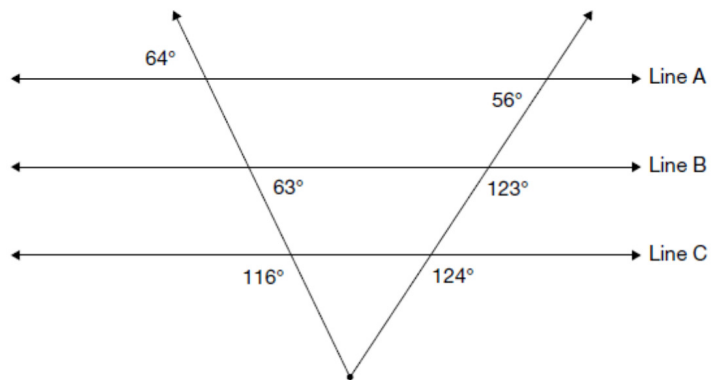


What are the values of x and y ?

- a $x = 40^\circ, y = 100^\circ$
- b $x = 40^\circ, y = 140^\circ$
- c $x = 50^\circ, y = 130^\circ$
- d $x = 50^\circ, y = 140^\circ$

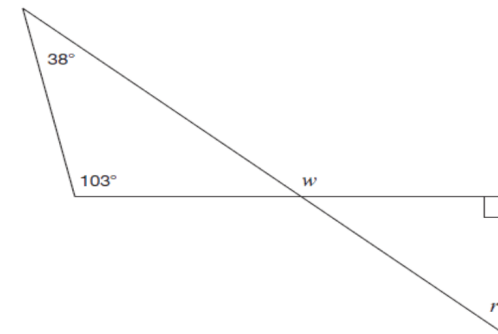
Parallel Illusions

Often lines that look parallel are not parallel.



Which two lines in the diagram above are parallel?
Justify your answer using geometric properties.

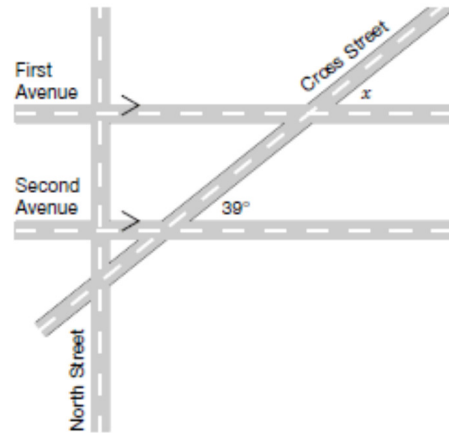
Consider the following diagram.



Determine the values of r and w .
Justify your answer.

	Value	Justification
r		
w		

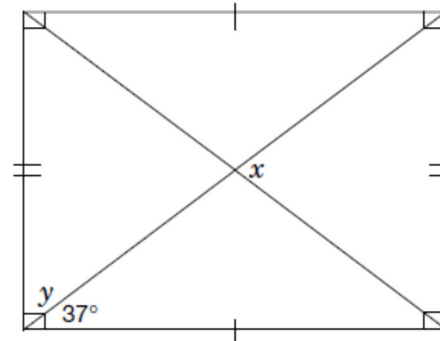
In the map below, First Avenue and Second Avenue are parallel.



What is the value of x ?

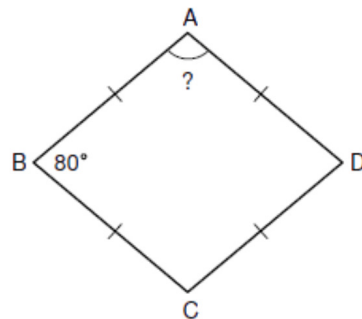
- F 321°
- G 141°
- H 51°
- J 39°

Sonya is building a rectangular deck in her backyard. The deck will have support beams running through the centre, making 4 isosceles triangles, as shown below.



Determine the values of x and y . Justify your answers.

ABCD is a quadrilateral with all sides the same length. $\angle B = 80^\circ$.

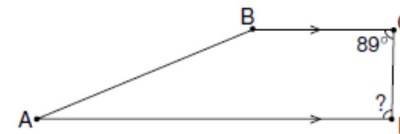


What is the measure of $\angle A$?

- a 80°
- b 90°
- c 100°
- d 110°

The figure ABCD is a trapezoid. BC is parallel to AD.

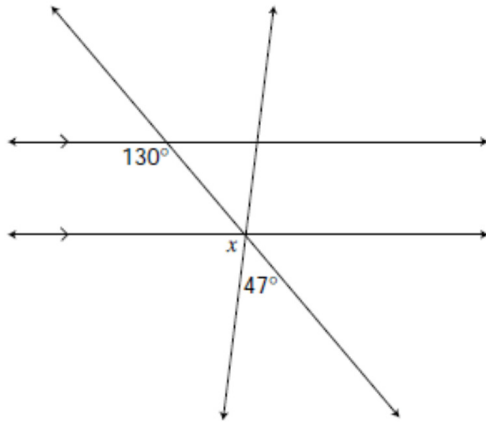
The measure of angle BCD is 89° . What is the measure of angle CDA?



Hint:
The diagram is **not** drawn to scale.

- a 21°
- b 86°
- c 90°
- d 91°

Determine the measure of x .



- a $x = 18^\circ$
- b $x = 30^\circ$
- c $x = 78^\circ$
- d $x = 83^\circ$

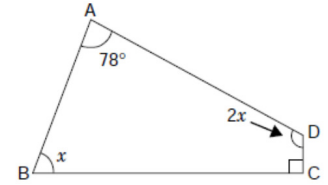
2. The Wind in the Sail

Marco is designing a new sail for his windsurfer.

He uses the quadrilateral below as the design of one part of the sail.

- a) Determine the value of x in the quadrilateral by solving the equation.

$$78 + x + 2x + 90 = 360$$

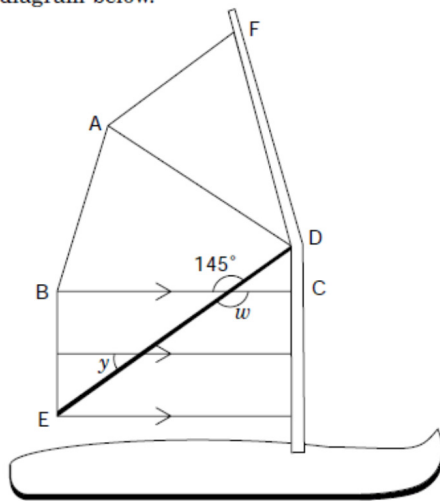


The bottom part of the sail is made of two rectangles.

A bar labelled ED crosses the two rectangles.

- b) Determine the measures of $\angle w$ and $\angle y$ in the diagram below. Justify your answers.

Angle	Angle measure	Reason
$\angle w$		
$\angle y$		



Marco needs to know the area of the quadrilateral part of the sail. He adds line BD to create 2 triangles and takes the measurements shown in the diagram.

- c) Determine the total area of the quadrilateral by calculating and adding the areas of the triangles. Show your work.

