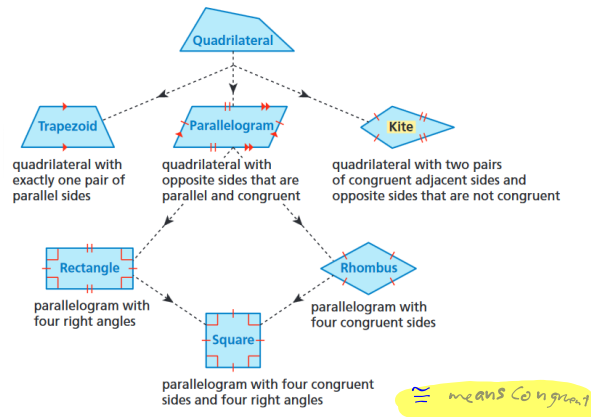


# Lesson 7.4a Quadrilaterals

## 7.4a Quadrilaterals

Quadrilateral - a polygon with 4 sides

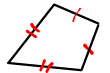


Ex. 1



Square, b/c  
 • 4 right angles  
 • 2 pairs of parallel sides  
 • 4 congruent sides

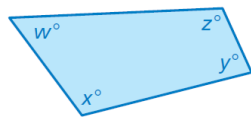
Ex. 2



Kite, b/c  
 • 2 pairs of  $\cong$  adjacent sides  
 • opposite sides are not  $\cong$

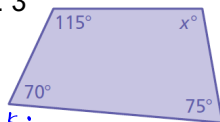
### Sum of the Angle Measures of a Quadrilateral

The sum of the angle measures of a quadrilateral is  $360^\circ$ .



$$w + x + y + z = 360$$

Ex. 3



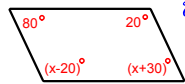
Find x.

check:

$$\begin{aligned} 115^\circ + 75^\circ + 70^\circ + 100^\circ &= 360^\circ \\ 190^\circ + 70^\circ + 100^\circ &= 360^\circ \\ 260^\circ + 100^\circ &= 360^\circ \\ 360^\circ &= 360^\circ \end{aligned}$$

$$\begin{aligned} x^\circ + 75^\circ + 70^\circ + 115^\circ &= 360^\circ \\ x^\circ + 145^\circ + 115^\circ &= 360^\circ \\ x^\circ + 260^\circ &= 360^\circ \\ -260^\circ & \quad -260^\circ \\ \hline x &= 100^\circ \end{aligned}$$

Ex. 4



Find x.

check:

$$\begin{aligned} 80^\circ + 20^\circ + (125-20)^\circ + (125+30)^\circ &= 360^\circ \\ 80^\circ + 20^\circ + 105^\circ + 155^\circ &= 360^\circ \\ 100^\circ + 105^\circ + 155^\circ &= 360^\circ \\ 205^\circ + 155^\circ &= 360^\circ \\ 360^\circ &= 360^\circ \end{aligned}$$

$$\begin{aligned} 80^\circ + 20^\circ + (x-20)^\circ + (x+30)^\circ &= 360^\circ \\ 100^\circ + (x-20)^\circ + (x+30)^\circ &= 360^\circ \\ 21 + 110^\circ &= 360^\circ \\ -110^\circ & \quad -110^\circ \\ \hline x &= 250^\circ \\ \hline x &= 125^\circ \end{aligned}$$