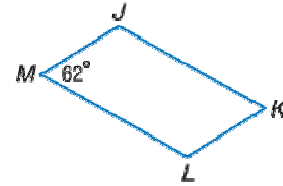


Lesson 4-8

Example 1

Find $m\angle J$ in $\square JKLM$, at the right.



Solution

Since $\angle K$ and $\angle M$ are opposite angles, by the parallelogram-angle theorem, $m\angle K = m\angle M = 62^\circ$.

Use the polygon-sum theorem to find the sum of the measures of the interior angles.

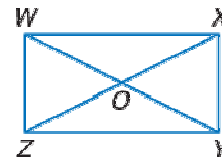
$$(n - 2)180^\circ = (4 - 2)180^\circ = (2)180^\circ = 360^\circ$$

Notice that $m\angle K + m\angle M = 62^\circ + 62^\circ = 124^\circ$. It follows that $m\angle J + m\angle L = 360^\circ - 124^\circ = 236^\circ$.

Since $m\angle J$ and $m\angle L$ are opposite angles, by the parallelogram-angle theorem, $m\angle J = 236^\circ \div 2 = 118^\circ$.

Example 2

ART A rectangular mural is reinforced from the back using wire diagonals. The diagram at the right shows how the wires are attached. If $ZO = 10$ ft, find WY .



Solution

A rectangle is a parallelogram. By the parallelogram-diagonal theorem, the diagonals bisect each other. So, $XZ = 2(ZO) = 2(10 \text{ ft}) = 20 \text{ ft}$.

Then, by using the rectangle-diagonal theorem, you now that the diagonals are equal in length. So, $WY = XZ = 20 \text{ ft}$.