**Activity 3.1.3a Proving the Quadrilateral Sum Theorem**

Fill in the blanks for the proof of the Quadrilateral Sum Theorem.

**Quadrilateral Sum Theorem:** The sum of the interior angle measures in any quadrilateral is 360°.



Given: *ABCD* is a quadrilateral

Prove: $m∠A+m∠B+m∠C+m∠D=360°$

Draw diagonal $\overbar{AC}$. We can do this because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



$m∠B+m∠1+m∠3= \\_\\_\\_\\_\\_\\_°$. We know this because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

$m∠D+m∠2+m∠4= \\_\\_\\_\\_\\_\\_°$. We know this because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

$m∠B+m∠1+m∠3+m∠D+m∠2+m∠4= \\_\\_\\_\\_\\_\\_°$. We know this because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

$m∠1+m∠2=m∠\\_\\_\\_\\_\\_\\_$, because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$m∠3+m∠4=m∠\\_\\_\\_\\_\\_\\_$, because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$m∠B+m∠D+m∠BAD+m∠BCD=\\_\\_\\_\\_\\_\\_°$, because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_