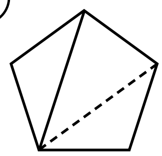
1) $2 \times 180° =$ **$360°$**
interior angles of a quadrilateral = **360°**

2)

a)

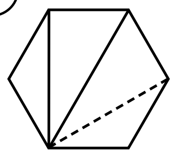


A pentagon can be partitioned into **3** triangles.

3 $\times 180° =$ **540°**

interior angles of a pentagon = **540°**

b)

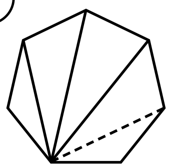


A hexagon can be partitioned into **4** triangles.

4 $\times 180° =$ **720°**

interior angles of a hexagon = **720°**

c)

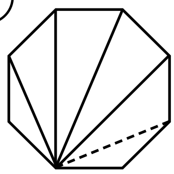


A heptagon can be partitioned into **5** triangles.

5 $\times 180° =$ **900°**

interior angles of an heptagon = **900°**

d)



An octagon can be partitioned into **6** triangles.

6 $\times 180° =$ **1080°**

interior angles of an octagon = **1080°**

3) The sum of the interior angles in a nonagon is 1260°.

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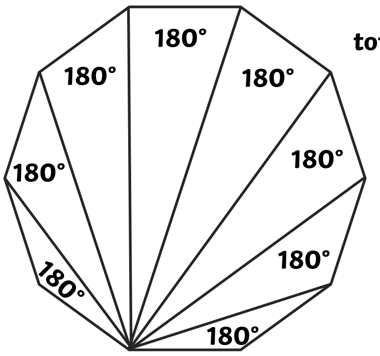
1) The statement is never true. For example, if we multiplied the number of side that a pentagon has by 180° we would get an answer of 900° when the sum of a pentagon's interior angles is actually 540°.

2) Olivia is incorrect because she has split the quadrilateral into four triangles when she should have split the quadrilateral into only two triangles. The reason that this has happened is that she has split the shape by drawing lines from two different vertices, instead of drawing a line from a single vertex.

3) Jia is correct. There are 8 triangles in a decagon which means the interior angles measure 1440°.



total interior angle sum = $8 \times 180 = 1440°$

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1) To calculate the interior angles, partition the shape into 3 triangles.
$3 \times 180° = 540°$

To calculate angle z:
$540° \div 5 = 108°$

To calculate angle x:
$540° \div 5 = 108°$
$180° - 108° = 72°$

To calculate angle y:
$540° \div 5 = 108°$
$90° + 108° = 198°$
$360° - 198° = 162°$

2) I am a regular octagon.

3) Anna's strategy will work. Children should check by partitioning shapes. Then, multiply the number of triangles in the polygon by 180°.