TOPIC 20-5: TESSELLATIONS

Tessellation: A repeating pattern that completely covers a plane with no gaps or overlaps. The measures of the angles that meet at each vertex must add up to 360°.

Let's determine which ***REGULAR*** polygons will tessellate...

POLYGON	**MEASURE OF ONE INTERIOR ANGLE:** $\frac{180(n-2)}{n}$	$\frac{360^\circ}{\text{one int. angle}}$	**DOES IT TESSELLATE?**
TRIANGLE			
SQUARE			
PENTAGON			
HEXAGON			
HEPTAGON			
OCTAGON			

EXAMPLE 1: Determine if a regular 20-gon will tessellate.

EXAMPLE 2: Determine if a regular 35-gon will tessellate.

You have determined that a square ***WILL*** tessellate.

Will a square tessellate if it is ***MODIFIED***???

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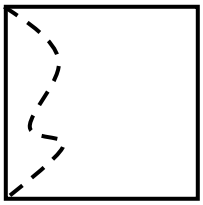
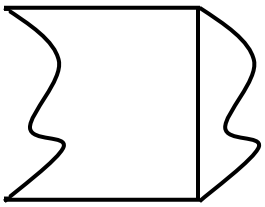
1) Cut out one of the two squares.

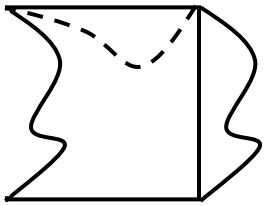
2) Draw a “curve” or shaped piece on one side of the square.

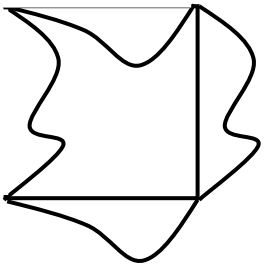


3) Cut along the “curve” then translate this piece to the opposite side and tape.



4) Do the same thing with the other pair of sides.

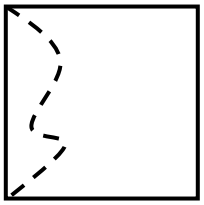




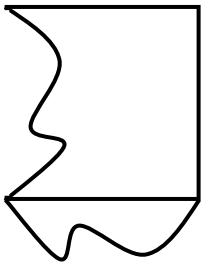
5) Will the “square” still tessellate?

Cut out the second square.

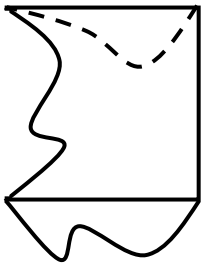
1) Draw a “curve” or shaped piece on one side of the square that begins in the upper left hand corner and ends at the lower left hand corner.



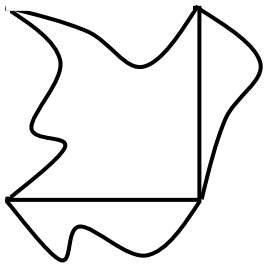
2) Cut along the “curve” then rotate this piece 90° clockwise and tape it to the adjacent side as shown.



3) Draw a “curve” that begins in the upper left hand corner and ends in the upper right hand corner.



4) Cut along the “curve” then rotate this piece 90° counter-clockwise and tape it to the adjacent side as shown.



5) Will the “square” still tessellate?