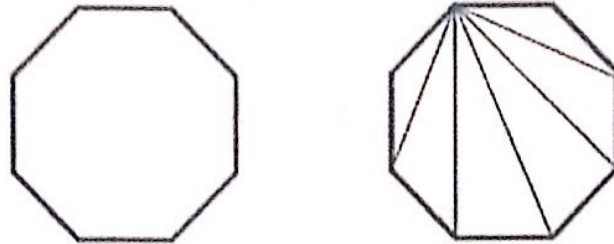


Exploring Polygon Angles







Let's Triangulate!

For each shape, find the number of triangles that make up that shape by drawing all the diagonals from a single vertex. (Connect that vertex with all of its non-consecutive vertices.) How many triangles make that shape?



Let's Calculate!

If you know that the sum of the interior angles for a triangle is 180° you can calculate the sum of the interior angles for all the triangles in that shape.

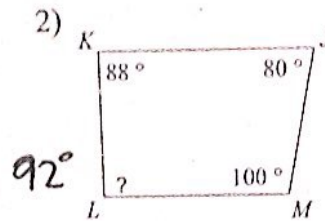
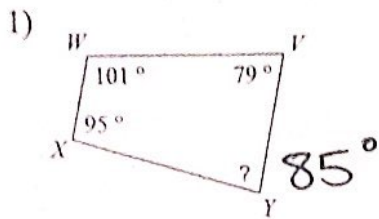
							n
Shape Name	triangle	square	Pentagon	hexagon	heptagon	octagon	n-gon
Number of sides	3	4	5	6	7	8	n
Number of vertices	3	4	5	6	7	8	n
Number of triangles	1	2	3	4	5	6	$(n-2)$
Sum of interior angles	180	360	540	720	900	1080	$180(n-2)$
Each interior angle (if regular)	60°	90°	108°	120°	128.57°	135°	$\frac{180(n-2)}{n}$

Let's Extrapolate!

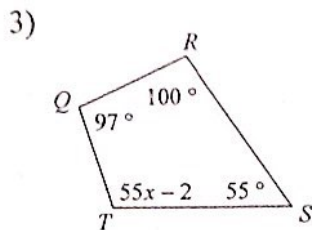
Using the information you found out about each polygon's sum of interior angles, can you fill in the column for n? For each n-gon with n number of sides, make a formula to show the sum of interior angles and each interior angle for a regular n-gon.

G5: Triangle and Quadrilateral Properties

Find the measure of each angle indicated.



Solve for x.



$$100 + 97 + 55x - 2 + 55 = 360$$

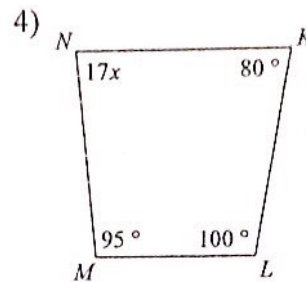
$$55x + 250 = 360$$

$$- 250 \quad - 250$$

$$55x = 110$$

$$\frac{55x}{55} = \frac{110}{55}$$

$$x = 2$$



$$17x + 80 + 100 + 95 = 360$$

$$17x + 275 = 360$$

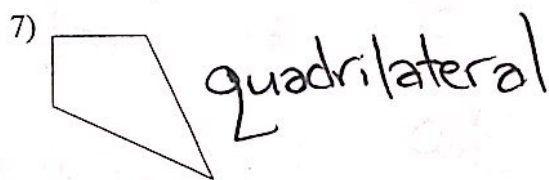
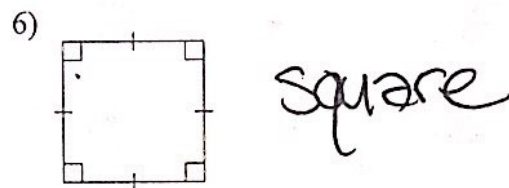
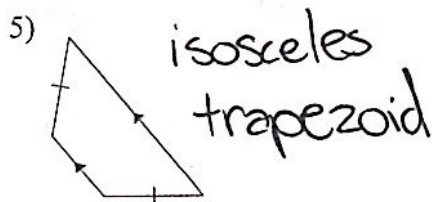
$$- 275 \quad - 275$$

$$17x = 85$$

$$\frac{17x}{17} = \frac{85}{17}$$

$$x = 5$$

State the most specific name for each figure.



State all possible names for each figure.

