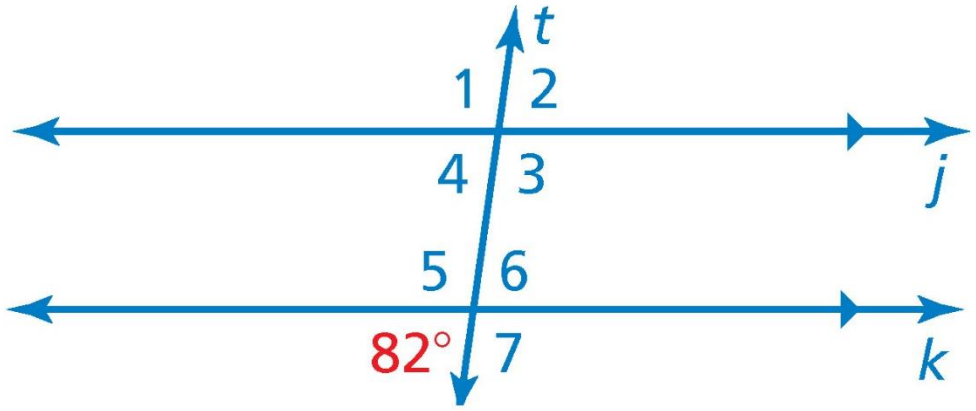
3.3

ANGLES OF POLYGONS

Review

Use the figure to find the measure of the angle. Explain your reasoning.



Possible explanations:

- Vertical Angles
- Supplementary Angles
- Corresponding Angles
- Supplementary Angles
- Alternate Interior Angles
- Alternate Exterior Angles
- (Or a combination of the above)

1) $m\angle 2 =$ _____ **. Why?** _____

2) $m\angle 6 =$ _____ **. Why?** _____

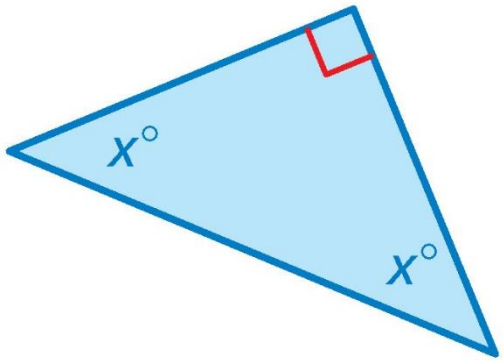
3) $m\angle 4 =$ _____ **. Why?** _____

4) $m\angle 1 =$ _____ **. Why?** _____

Review

Find the measures of the interior angles algebraically. SHOW WORK!

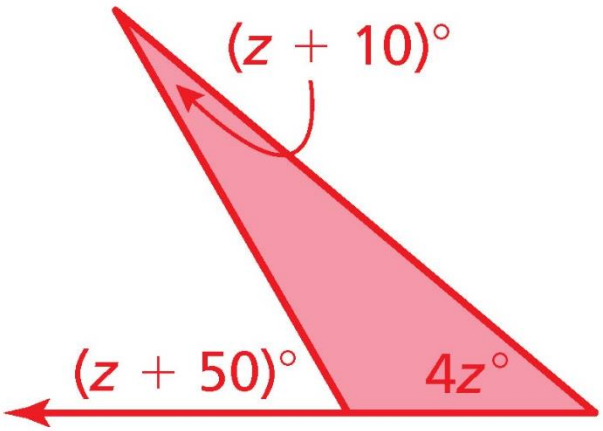
5)



Review

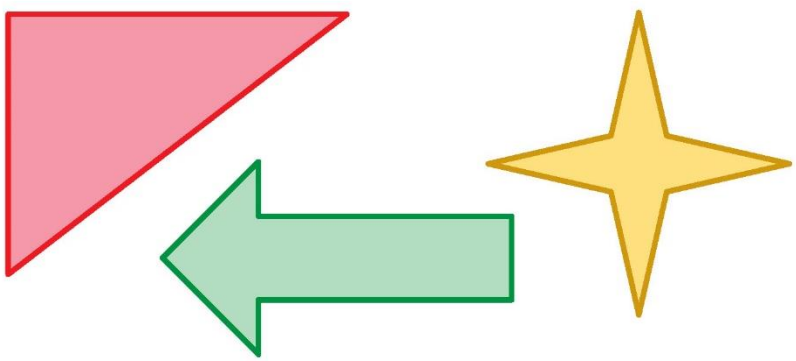
Find the measures of the exterior angle algebraically. SHOW WORK!

6)

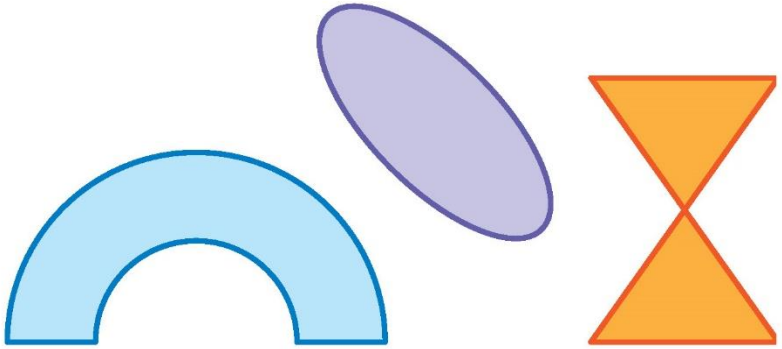


Vocabulary

Polygon



Polygons



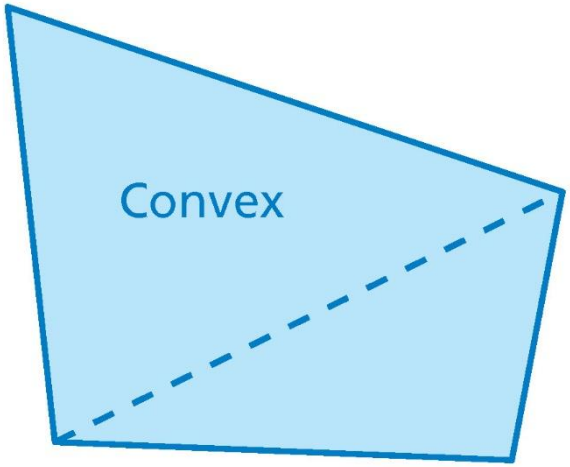
Not polygons

A _____ figure made up of 3 or more line

_____ .

Vocabulary

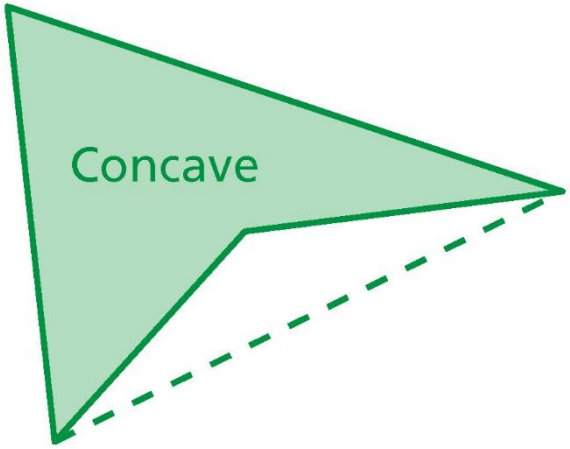
Convex Polygon



A polygon in which you can connect any two vertices _____ the polygon.

Vocabulary

Concave Polygon



A polygon in which you can connect at least one pair of vertices _____ the polygon.

Vocabulary

Equilateral Polygon

A polygon with all _____ _____ .

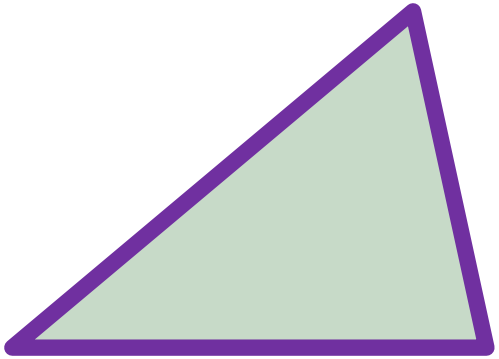
Equiangular Polygon

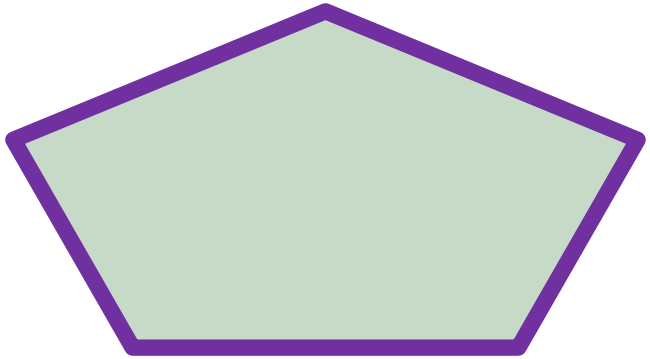
A polygon with all _____ _____ .

Regular Polygon

A polygon with all _____ and _____ _____ .

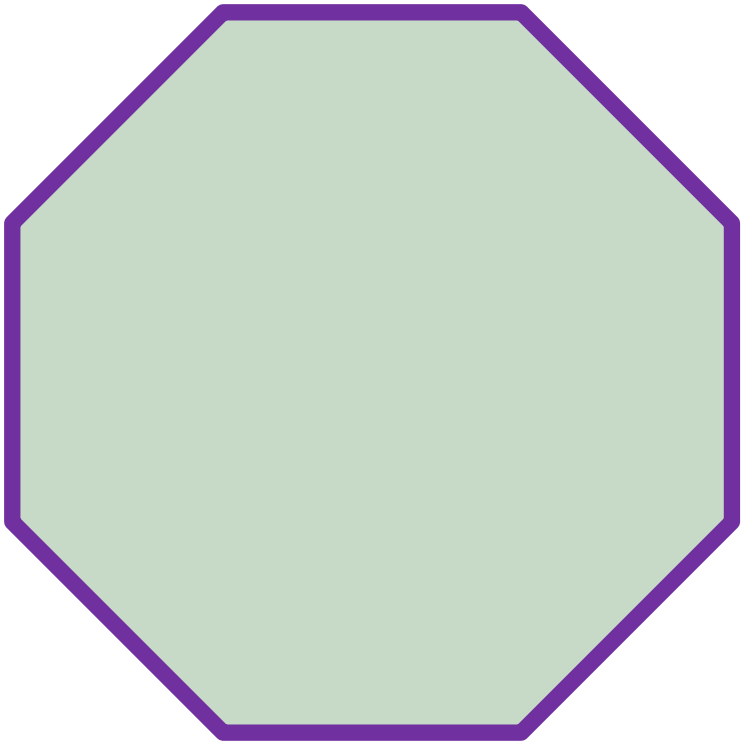
How do we figure out the sum of the angles in any polygon?





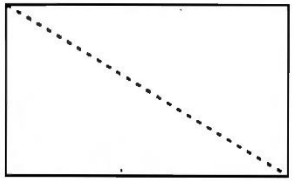
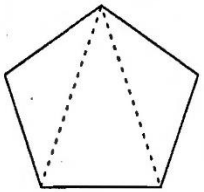
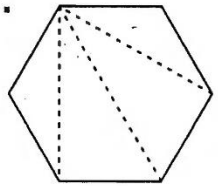
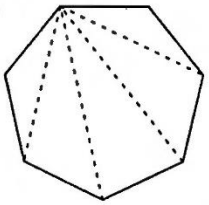
POLYGON INTERIOR ANGLES SUM

The formula to figure the sum of all the angles in a polygon with n sides is:



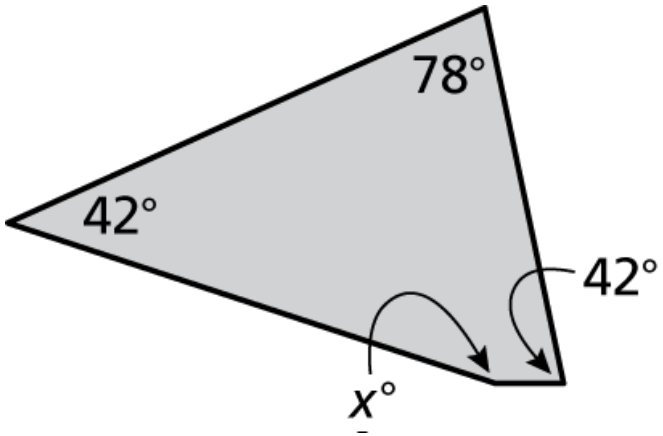
Complete the following:

7)

Figure	Number of sides	Number of triangles formed	Total number of degrees
A. 			
B. 			
C. 			
D. 			

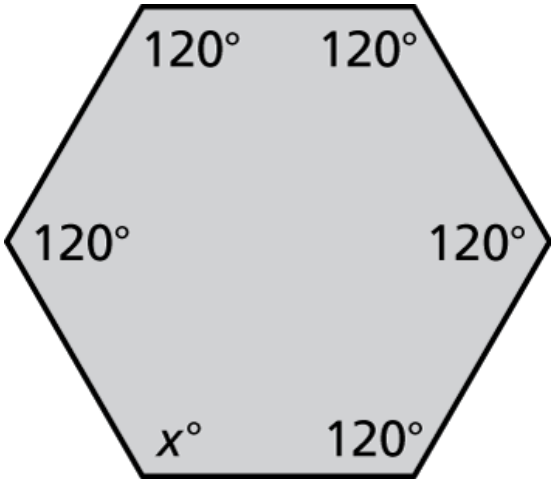
Find the measures of the interior angles algebraically.

8)

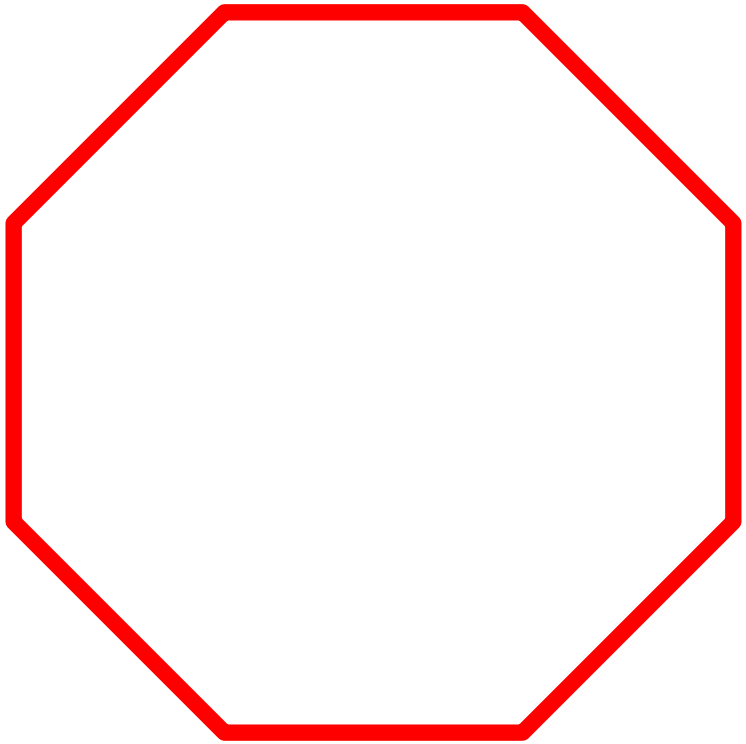


Find the measures of the interior angles algebraically.

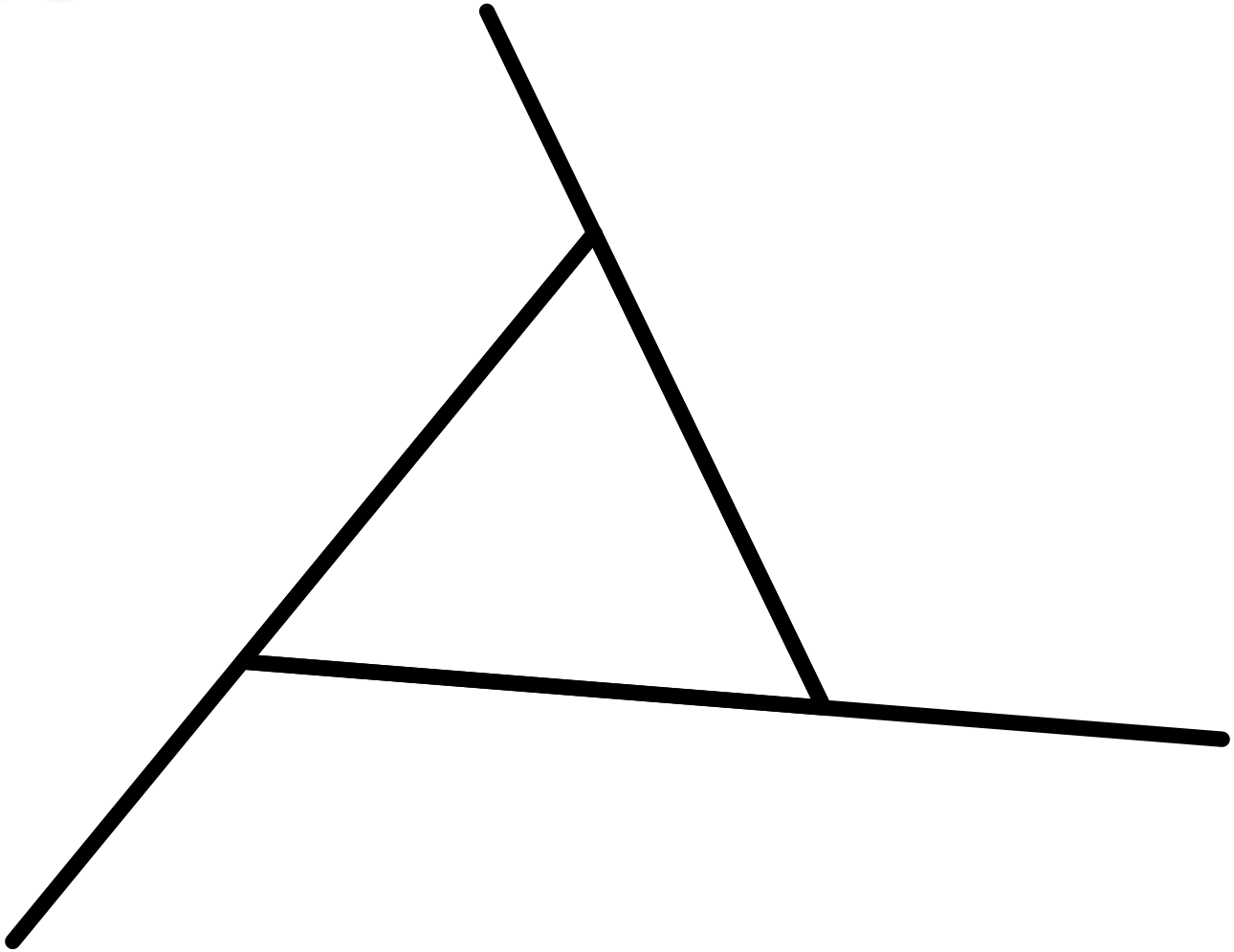
9)



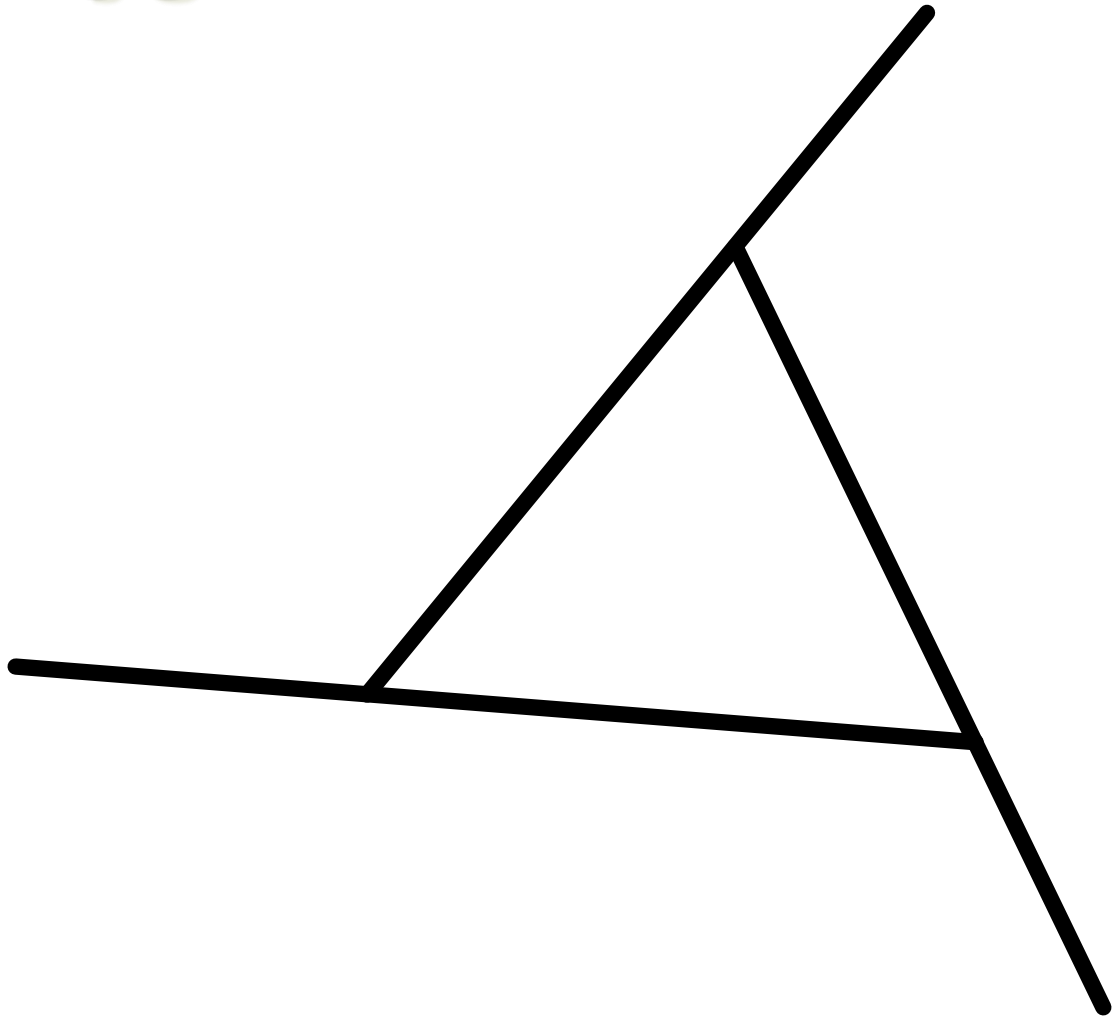
10) **A stop sign is in the shape of a regular octagon. What is the measure of each interior angle?**



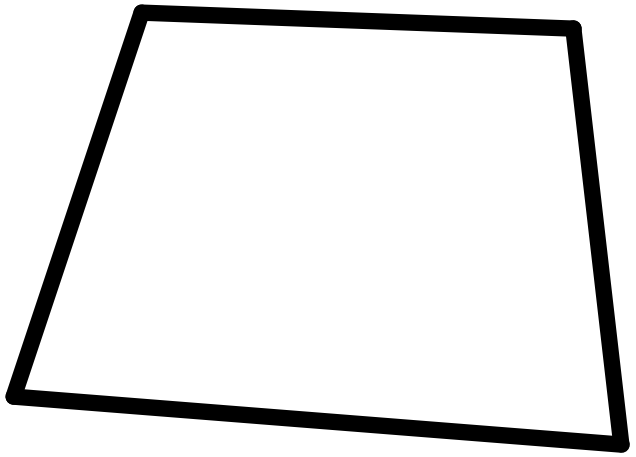
Making exterior angles in a polygon



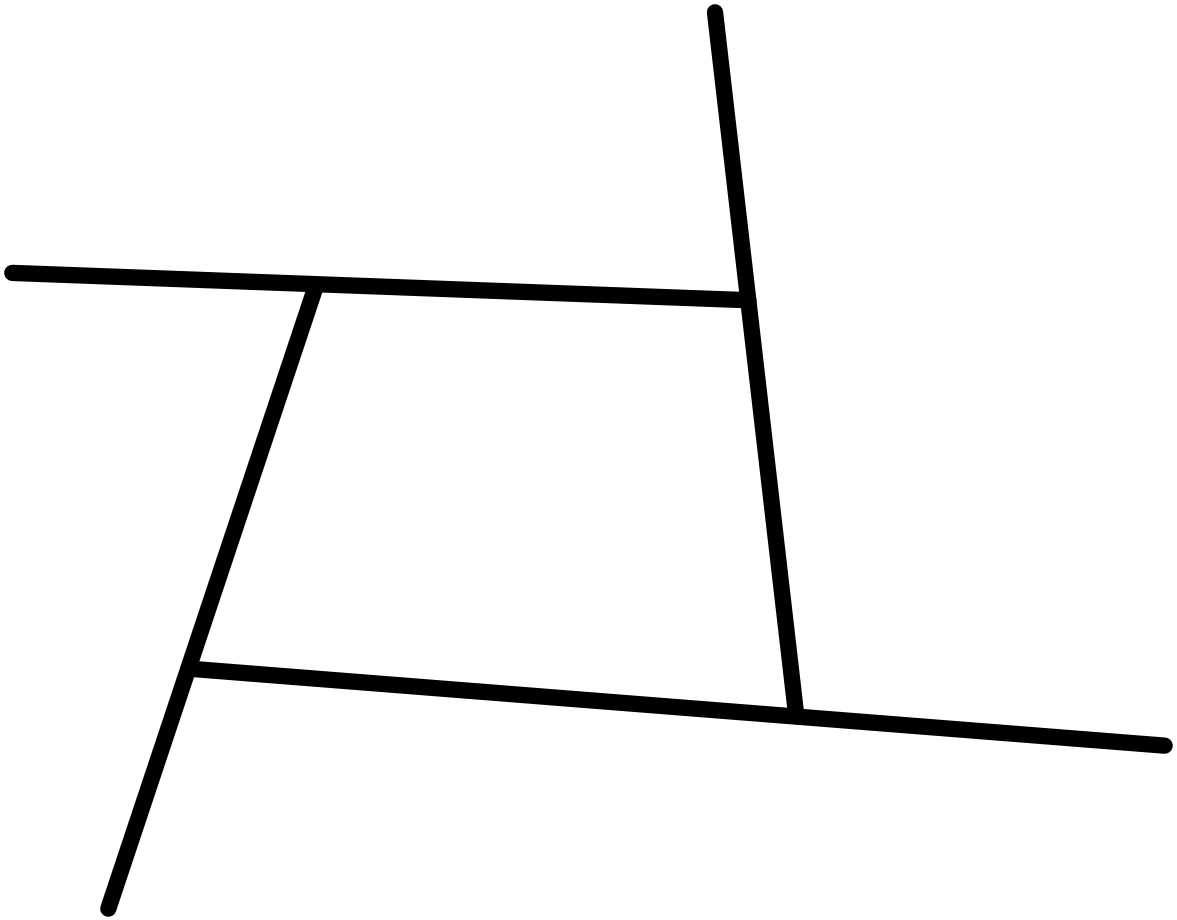
Making exterior angles in a polygon



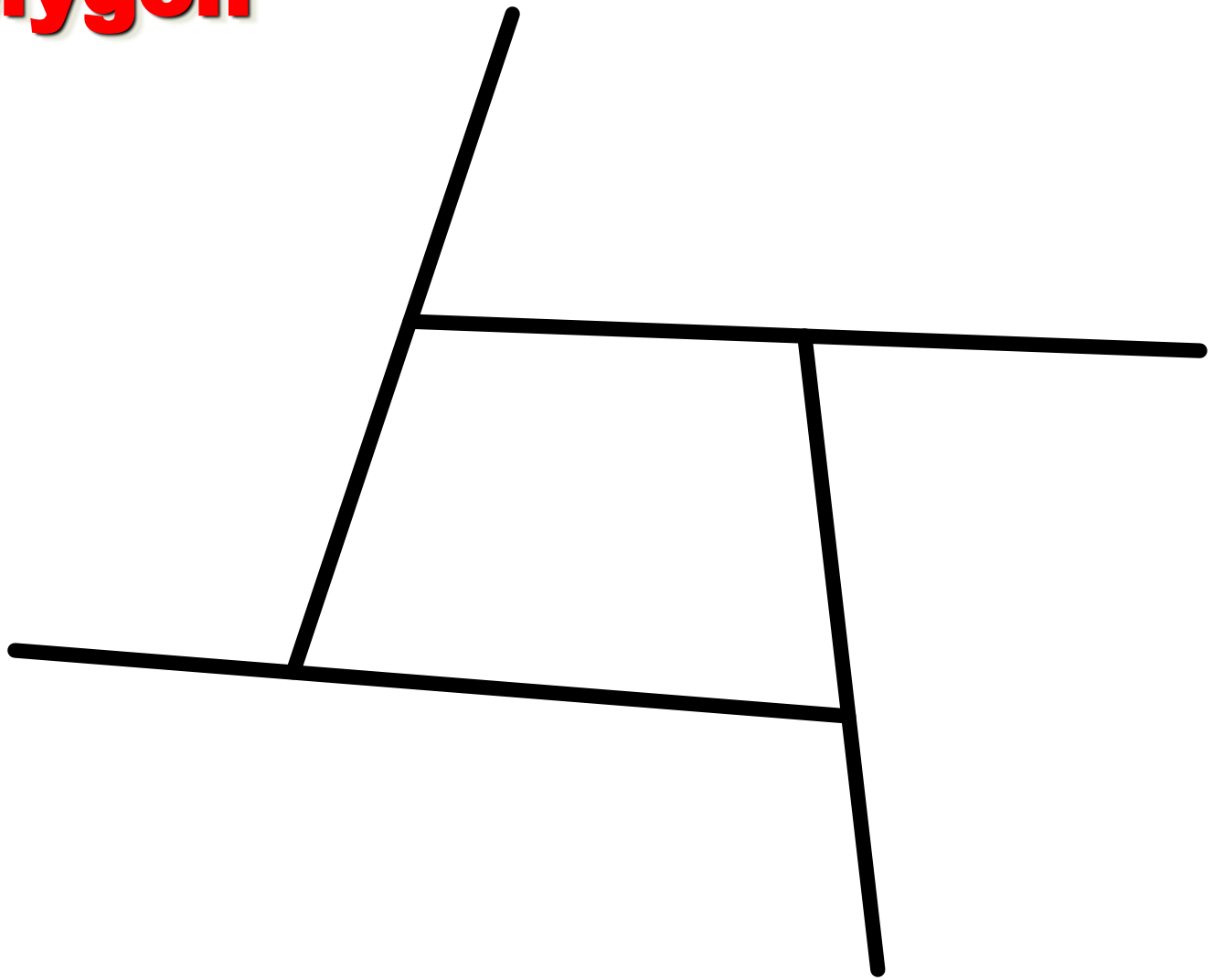
Making exterior angles in a polygon



Making exterior angles in a polygon

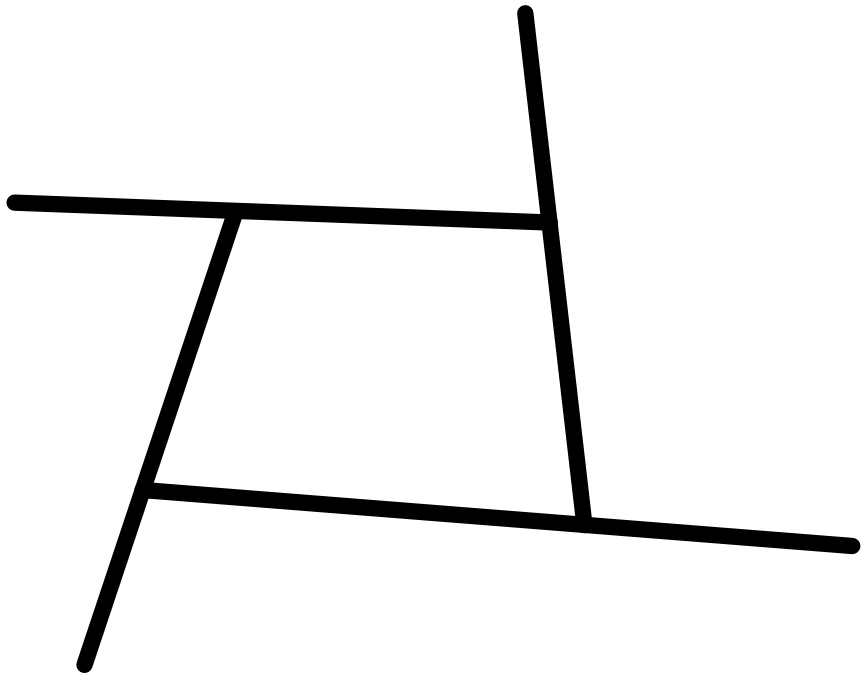


Making exterior angles in a polygon



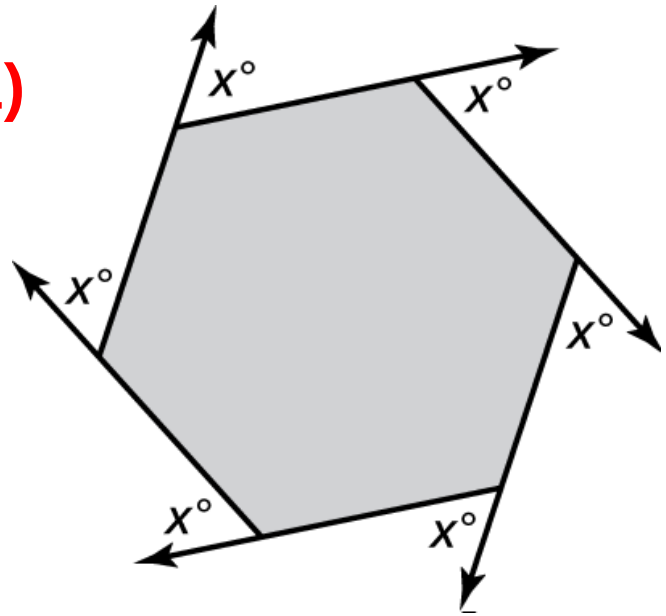
POLYGON EXTERIOR ANGLES SUM

The sum of all the exteriors angles in a polygon is _____.



Find the measures of the exterior angles of the polygon.

11)



Find the measures of the exterior angles of the polygon.

12)