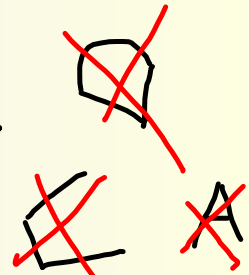
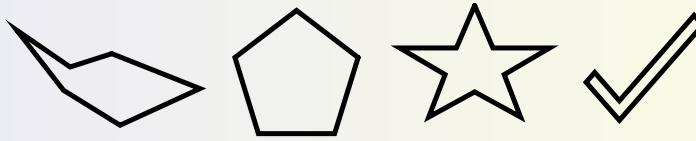




LESSON # 37 ~ Polygons

A Polygon is a **closed** figure formed by **3 or more line segments**.

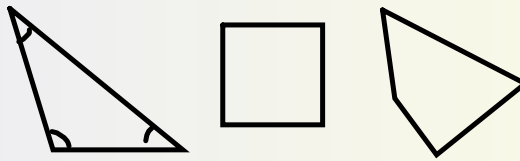
examples



Convex Polygon is a polygon with **no reflex angles**. $> 180^\circ$

*Means that no side when you extend it can go through the polygon.

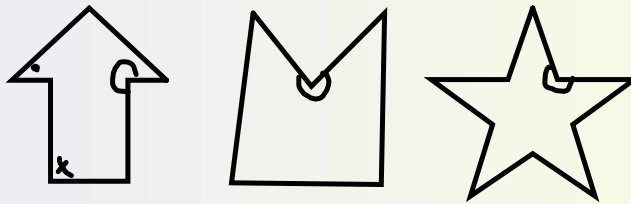
examples



Concave Polygon is a polygon with **at least one reflex angle**.

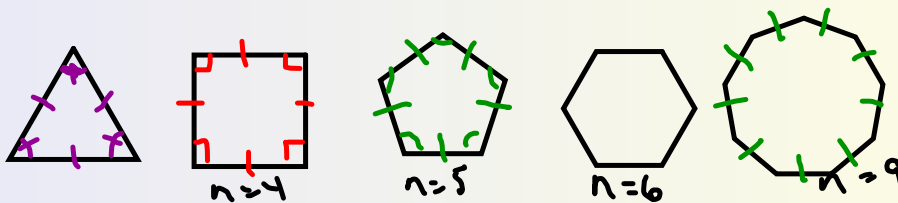
*Means when you extend one side it can go through the polygon.

examples



Regular Polygons are polygons with **both congruent sides and angles**.

examples



To find interior angle measures ?

$(n - 2) \times 180^\circ$

↑
number of sides



$n = 3$

$(3 - 2) \times 180 = 180^\circ$

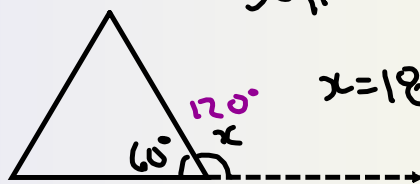
formula

flash game

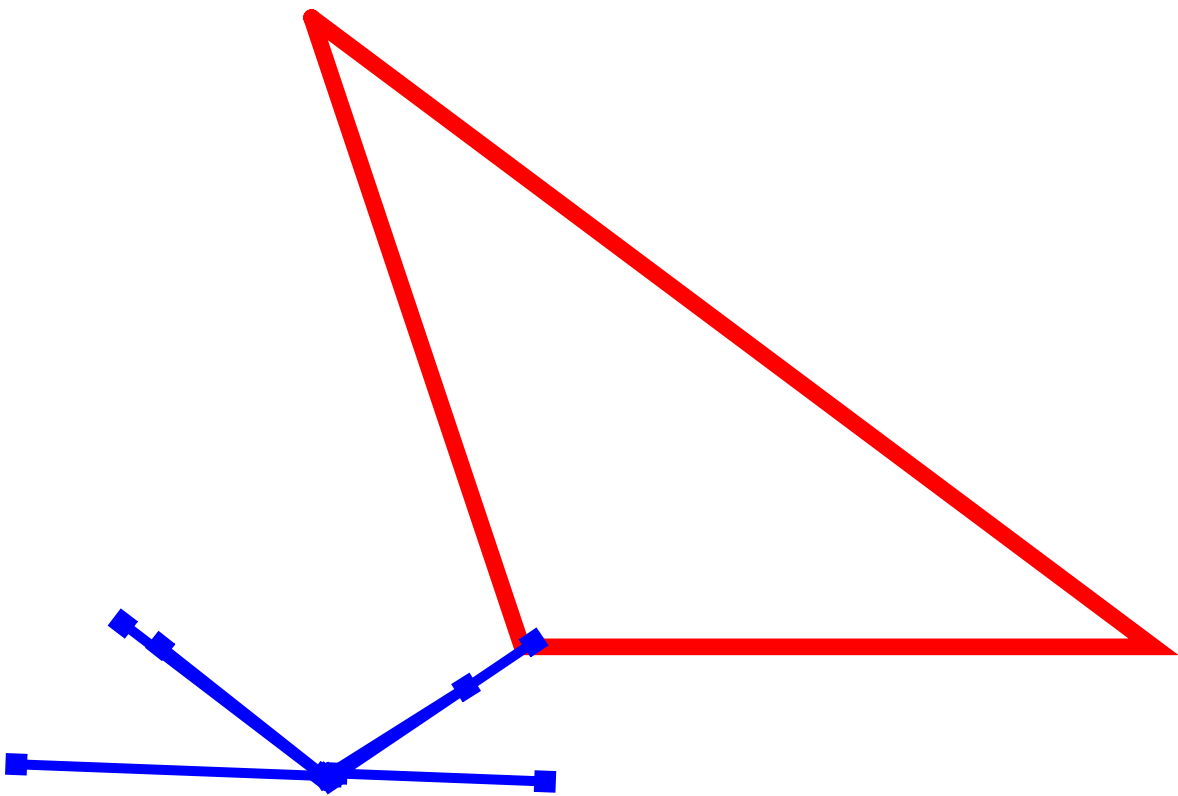
To find exterior angle measures ?

Supplementary angles

$180 \div 3 = 60^\circ$



$x = 180 - 60 = 120^\circ$



Classifying Polygons

# of sides	name of polygon
3	triangles
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon
11	hendecagon/ undecagon
12	dodecagon

Angles

Acute \angle ~ less than 90° angle

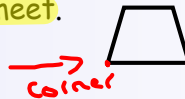
Obtuse \angle ~ between 90° and 180° angle

Right \angle ~ a 90° angle

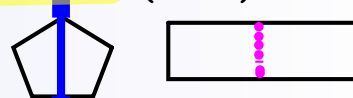
Straight \angle ~ a 180° angle

Reflex \angle ~ between 180° and 360° angle

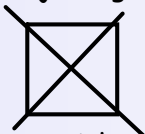
Vertex is the point where 2 lines meet.



To Bisect is to divide a figure into 2 congruent parts (halves).



Diagonal is a line joining 2 non-neighbouring points.



*A convex polygon with n sides can be divided into...

$n - 2 = \text{\#triangles}$ (from one vertex) $\frac{1}{2}n(n - 3) = \text{\#diagonals}$

$n = 5$
 $5 - 2 = 3$

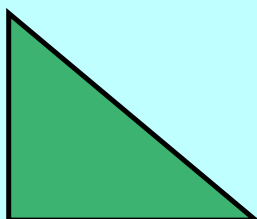
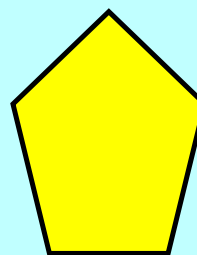
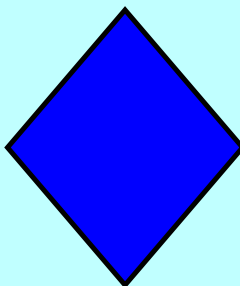
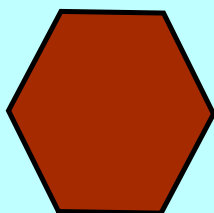
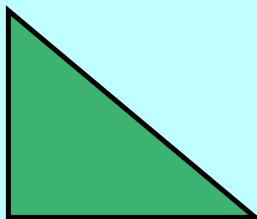
how many triangles

$\frac{5(5-3)}{2}$
 $\frac{5(2)}{2} = 5$

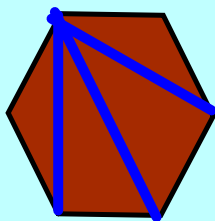
Homework
Act Book P 72-3

MINI-LESSON:

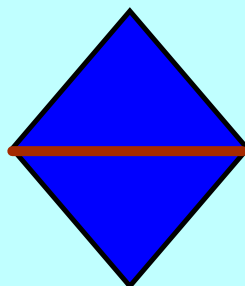
1. How many triangle(s) can the polygon be divided into?



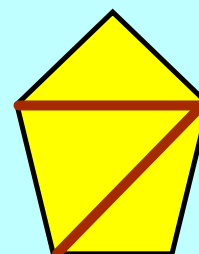
1



4



2



3

[click here to find the answers](#)

Attachments

iMaths__3_D_Graphics.wmv