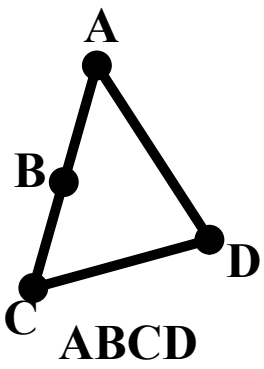
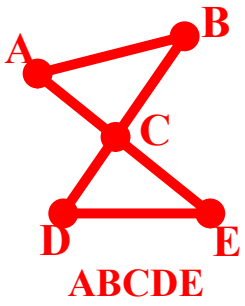
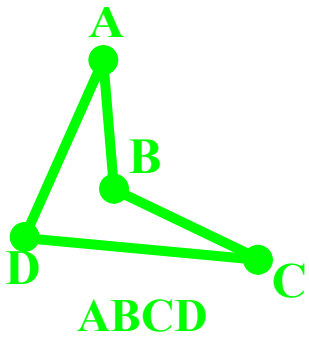
Def. Polygon

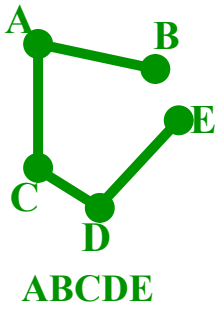
A polygon is a closed figure formed by 3 or more coplanar segments such that:

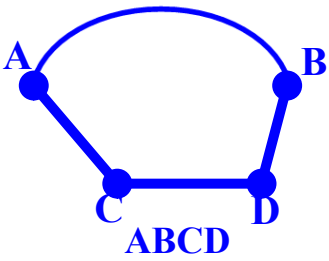
1. **The sides that share a common endpt. are noncollinear.**
2. **Each side intersects exactly 2 other sides, but only at the endpts.**

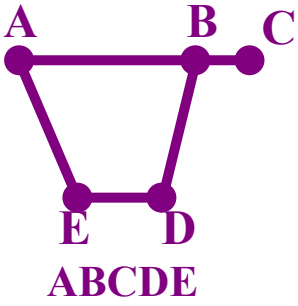

A
B
D
C
ABCD


A
B
C
D
E
ABCDE


A
B
D
C
ABCD

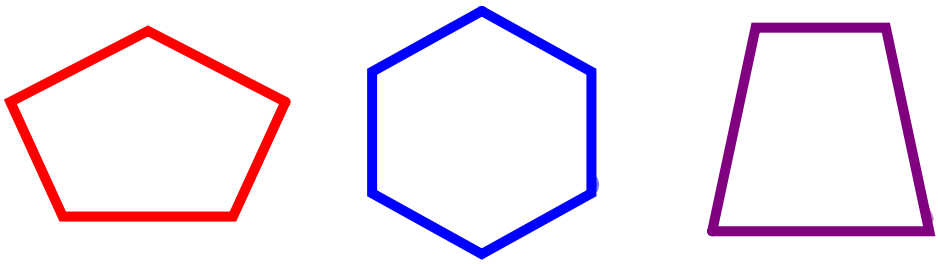

A
B
E
C
D
ABCDE


A
B
C
D
ABCD


A
B
C
E
D
ABCDE

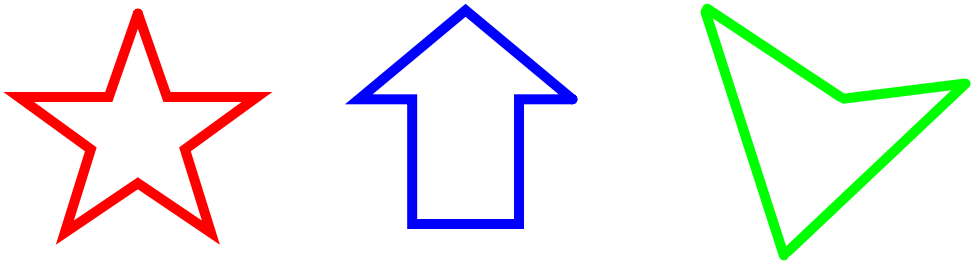
Def. Convex Polygon

A polygon such that no line containing a side contains points in the interior of the polygon



Def. Concave Polygon

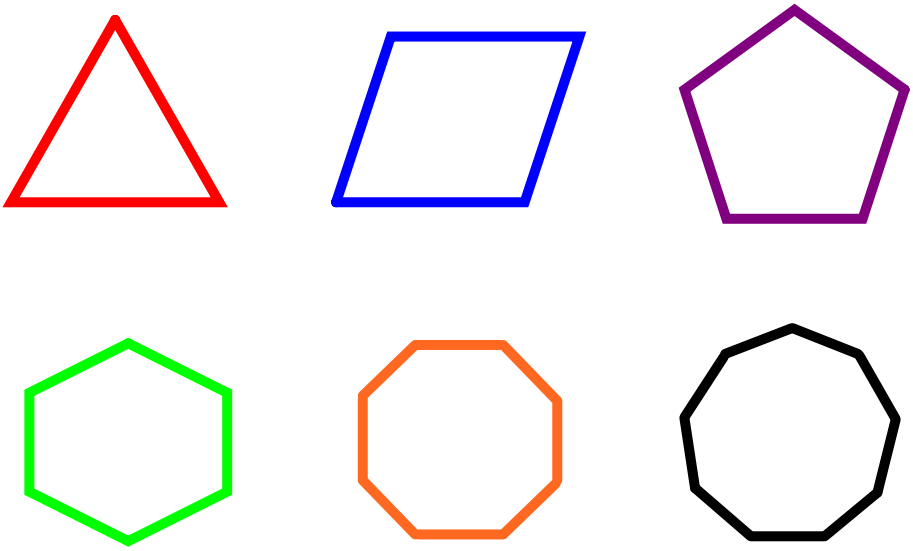
A polygon such that the line containing a side contains points in the interior of the poygon.



# of Sides	Name
3	Triangle
4	Quadrilateral
5	Pentagon
6	Hexagon
7	Heptagon
8	Octagon
9	Nonagon
10	Decagon
n	*n*-gon

Def. Regular Polygon

A convex polygon with all sides and all ∠'s ≅.



Def. Perimeter

The sum of the lengths of all of the sides of a polygon.

Def. Circumference

The distance around a circle.

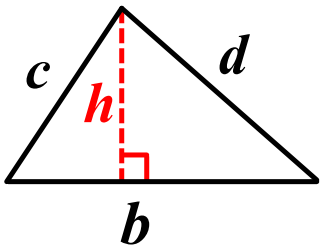
Def. Area

The number of square units needed to cover a surface.

Triangle

$P = b + c + d$

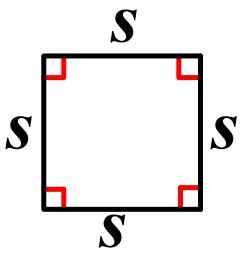
$A = \frac{1}{2}bh$



Square

$P = s + s + s + s$

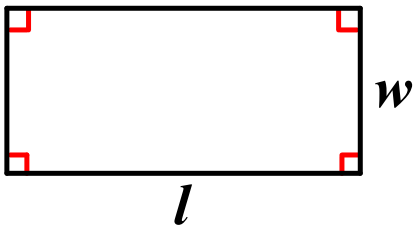
$A = s^2$



Rectangle

$P = 2l + 2w$

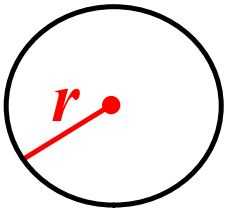
$A = lw$

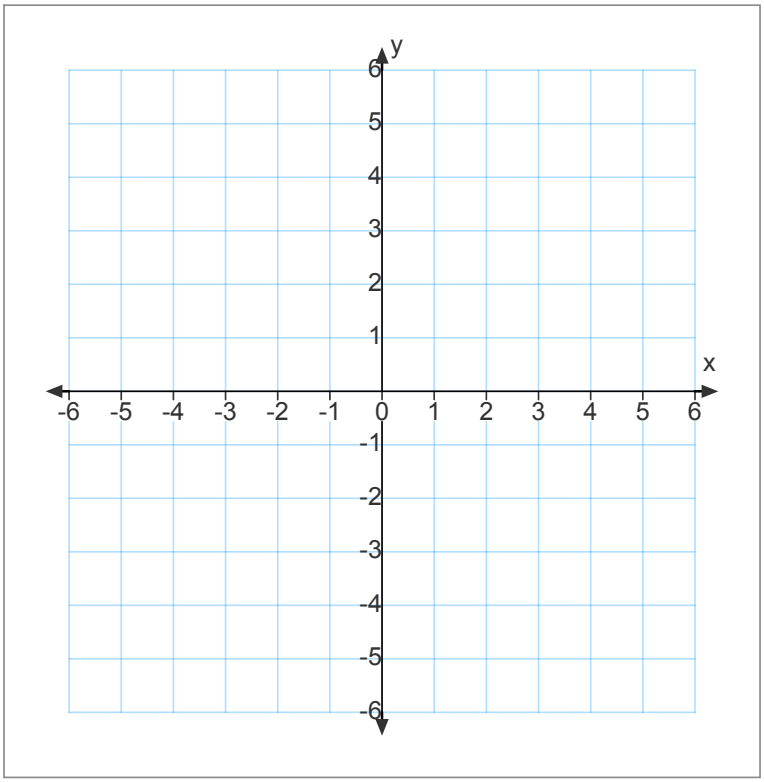


Circle

$C = 2\pi r$

$A = \pi r^2$





Given Points:
P (-1,3)
Q (-3,-1)
R (4,-1)

Find the **Area** and **Perimeter** of the figure.