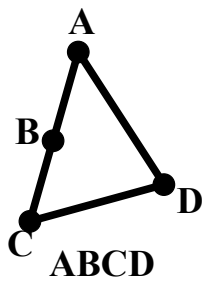
Def. Polygon

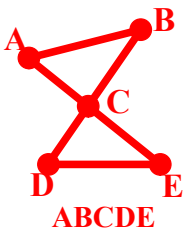
A polygon is a closed figure formed by 3 or more coplanar segments such that:

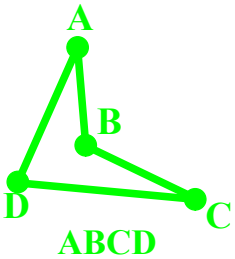
1. **The sides that share a common endpt. are noncollinear.**
2. **Each side intersects exactly 2 other sides, but only at the endpts.**

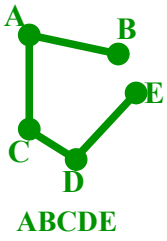
Name: by the letters of its vertices, written in order of consecutive vertices

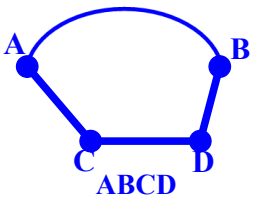
None of these figures are polygons - why not?

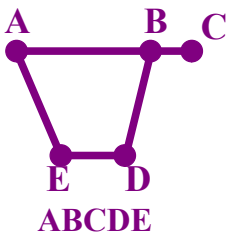






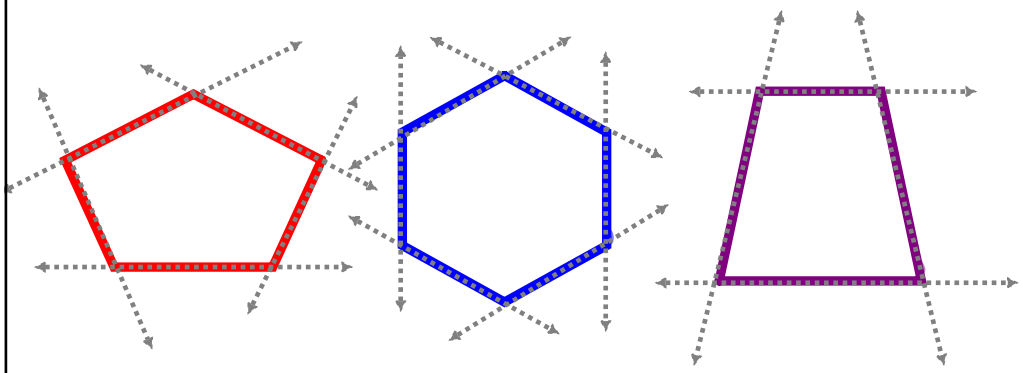






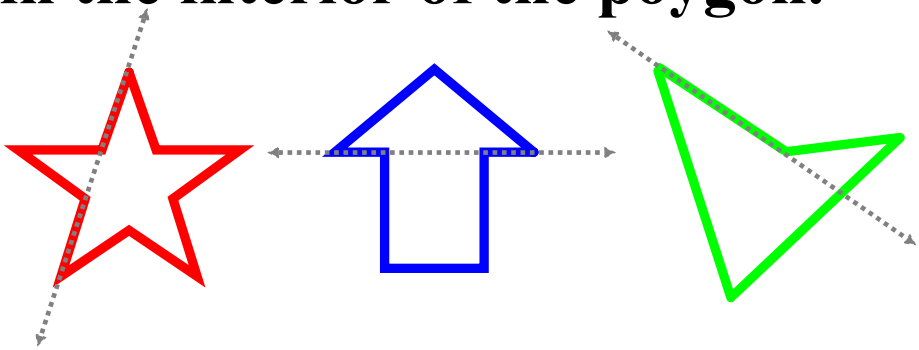
Def. Convex Polygon

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



Def. Concave Polygon

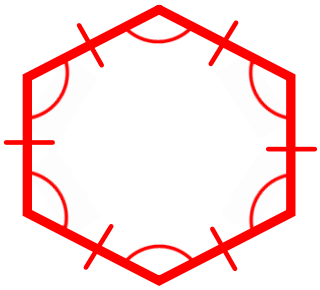
A polygon such that the line containing a side contains points in the interior of the poygon.



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

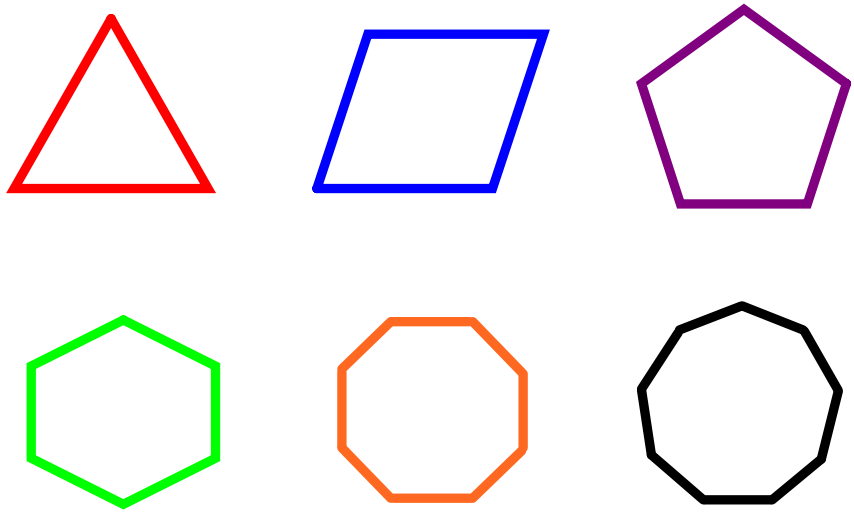
Def. Regular Polygon

A convex polygon with all sides and all $\angle$'s $\cong$.



Quick Practice:

p. 50 in text - answer # 1A and 1B in "Check your progress" (read a. and b. above them if you have more questions!)



Def. Perimeter

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

Always symbolized by P for "perimeter."

Def. Circumference

The distance around a circle.

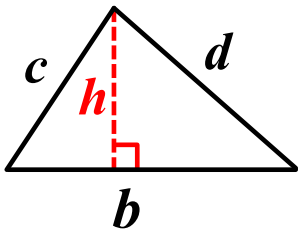
Def. Area

The number of square units needed to cover a surface.

Triangle

$P = b + c + d$

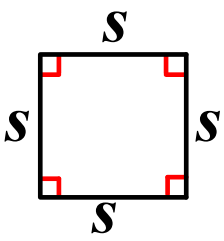
$A = \frac{1}{2}bh$



Square

$P = s + s + s + s$

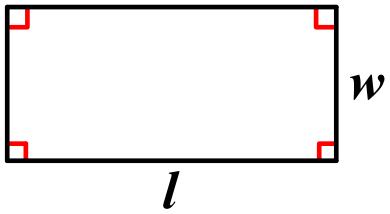
$A = s^2$



Rectangle

$P = 2l + 2w$

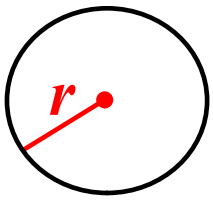
$A = lw$



Circle

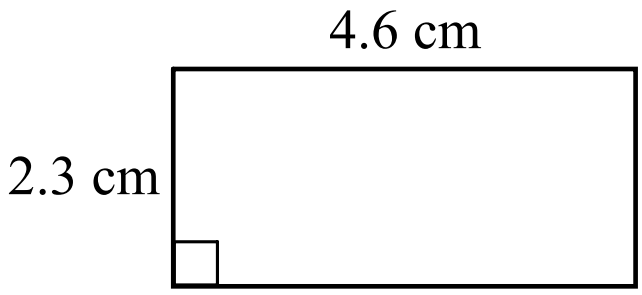
$C = 2\pi r$

$A = \pi r^2$

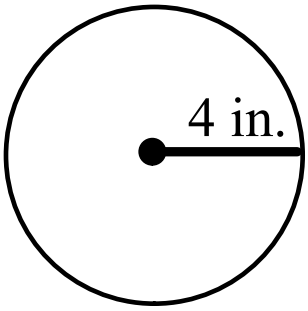


Practice

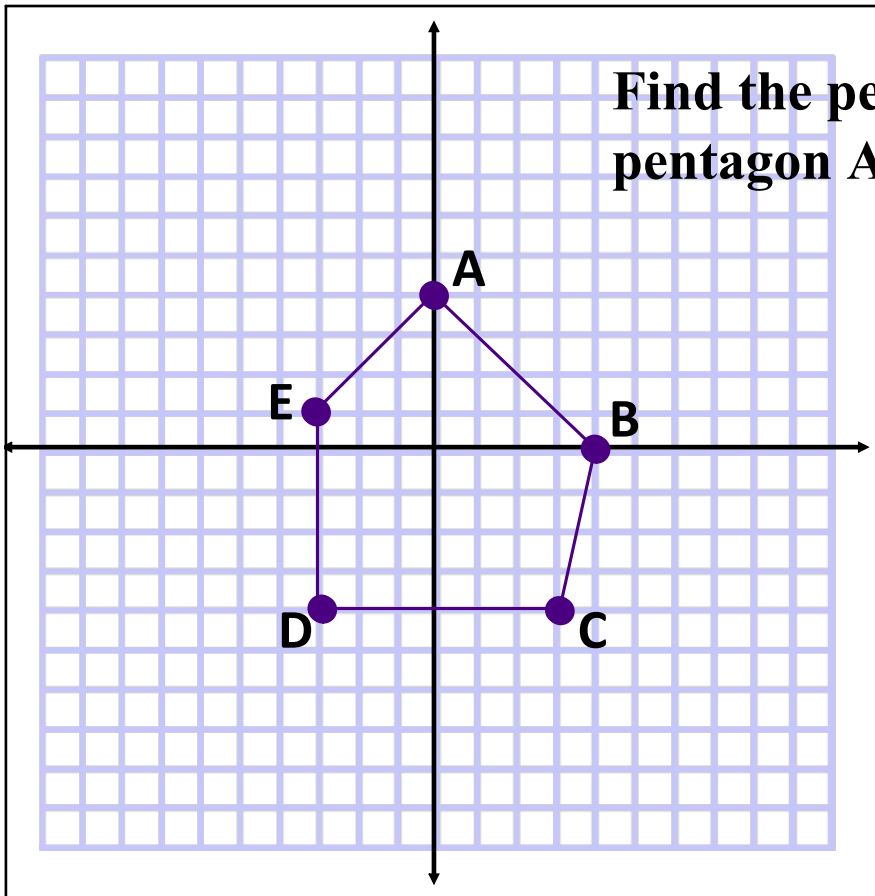
Find the perimeter and area to the nearest tenth.

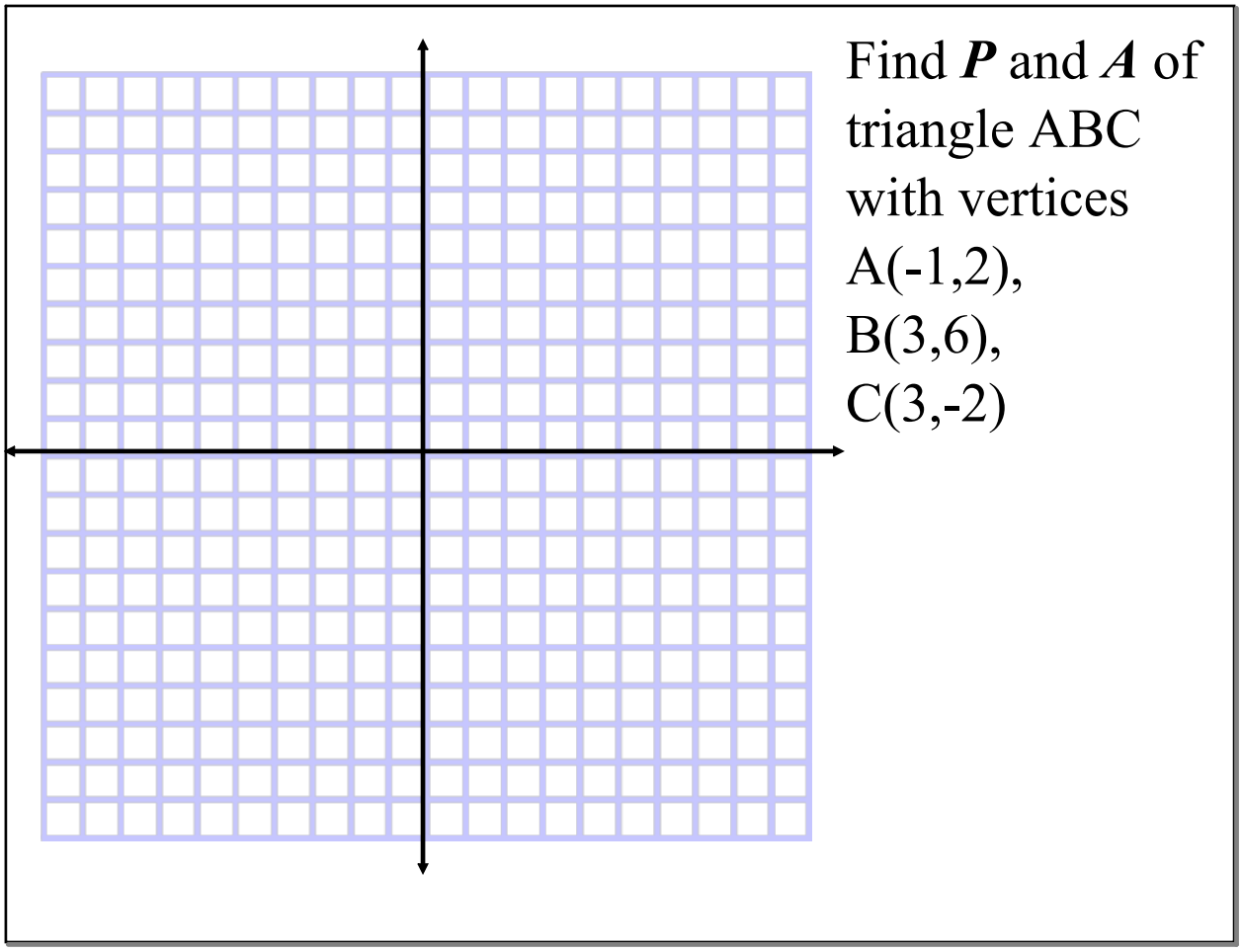


Find the circumference and area to the nearest tenth.



Find the perimeter of pentagon ABCDE.




Find *P* and *A* of triangle ABC with vertices A(-1,2), B(3,6), C(3,-2)