Two Dimensional Figure Information

Polygons

Polygons are closed figures with line segments as sides. They are named for the number of sides that they have. We call them ***regular***, if all the sides and angles are the same. We study the characteristics of ***triangles*** (3-sided) and ***quadrilaterals*** (4-sided) figures in depth. For figures what we need to know are names, certain angle information (which we will review later) and the area and perimeter.

Special Angle Sums (used later)

The sum of the angles of a triangle is 180.
The sum of angles in a polygon is equal to 180 times the number of sides minus 2:

S = 180 x (*n* – 2)

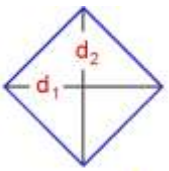
(Start with a triangle's angle summing to 180; add 180 for each additional side)

Sides	Name	Angle Sum
3	Triangle	180
4	Quadrilateral	360
5	Pentagon	540
6	Hexagon	720
7	Heptagon	900
8	Octagon	1080
9	Nonagon	1260
10	Decagon	1440
12	Dodecagon	1800
N	N - gon	(n-2) x 180

Perimeter and Area:

We will have formulas for the area of triangles and quadrilaterals on our formula sheet. The exception is the area of a rhombus and the area of a regular polygon, which are not on the formula sheet.

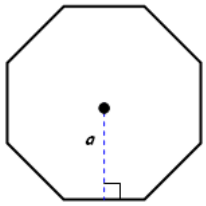
Rhombus: $A = \frac{1}{2} d_1 \times d_2$ Perimeter = 4*s* (square)
where d_i is a diagonal (corner to corner in the rhombus) and *s* is the length of a side



Area of Rhombus = $\frac{1}{2}(d_1 x d_2)$
(d_1 and d_2 are diagonals)

Regular Polygon: $A = \frac{1}{2} pa$ where p is the perimeter ($p = ns$), s is side length, and a is the apothem (looks like a radius, but perpendicular to the side of the polygon); the apothem can be figured out with Pythagorean Theorem or with trig, if it is not given.

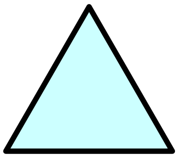
$A = \frac{1}{2} a \cdot p$



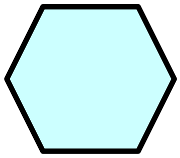
Figures Worksheet

Name: ____________________

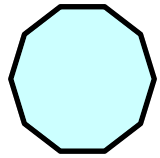
Two dimensional figures:
Give name, number of sides and sum of interior angles



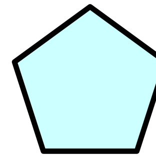
Name: ____________
Sides: ______
Sum of ∠: _________



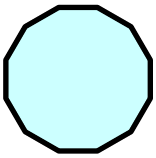
Name: ____________
Sides: ______
Sum of ∠: _________



Name: ____________
Sides: ______
Sum of ∠: _________



Name: ____________
Sides: ______
Sum of ∠: _________



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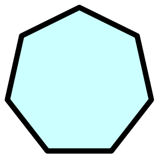
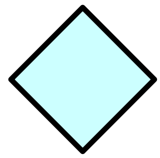
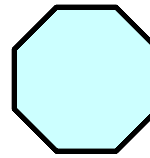
Sides: ______
Sum of ∠: _________



Name: ____________
Sides: ______
Sum of ∠: _________

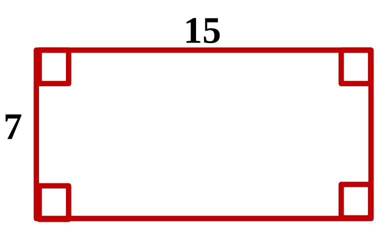


Name: ____________
Sides: ______
Sum of ∠: _________

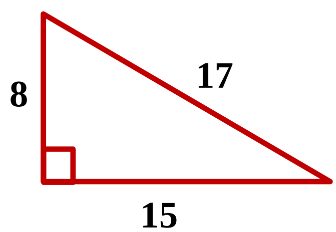


Name: ____________
Sides: ______
Sum of ∠: _________

Find the perimeter and area of the figures below:



P = _____
A = _____



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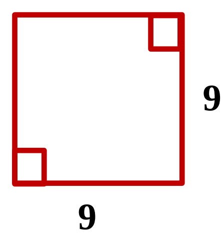

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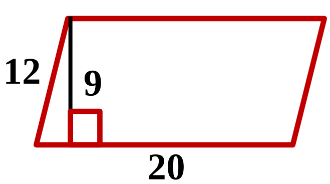

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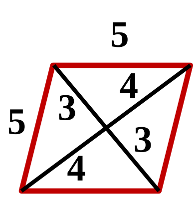

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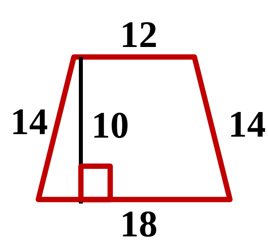

P = _____
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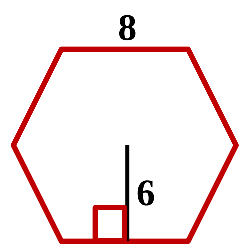

P = _____
A = _____