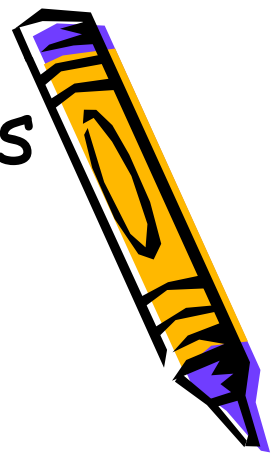# Geometry

Area and Perimeter of Basic Figures

Area and Perimeter of Basic Figures

Area: Refers to the number of square units of measurement contained within a figure. Area is always in units squared.

Perimeter: Refers to the number of linear units around the outside of a figure.

Area and Perimeter of Basic Figures

Each basic figure (parallelogram, triangle, trapezoid, circle, etc.) has its own formula for area.

Perimeter is simply the sum of the sides that make up the outside of the figure.

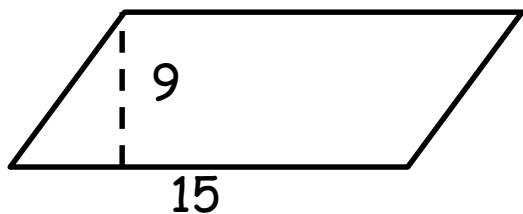The distance around the outside of a circle is called circumference and has it's own formula.

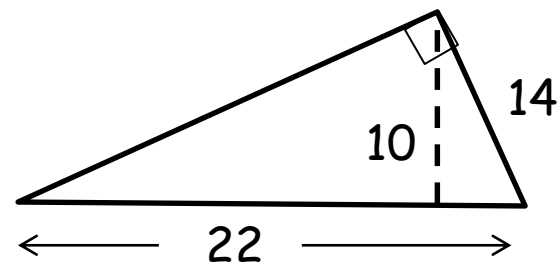Formulas can be found on most standardized test (SAT, ACT, PARCC, etc.) reference sheets.

Area and Perimeter of Basic Figures

Find the area and perimeter of each figure.

$a = b * h$

$a = 15 * 9$

$a = 135$

$a = \frac{1}{2} * b * h$

$a = \frac{1}{2} * 22 * 10$

$a = 110$

Use pythagorean theorem to find the missing side of the triangle.

$p = 22+14+17$

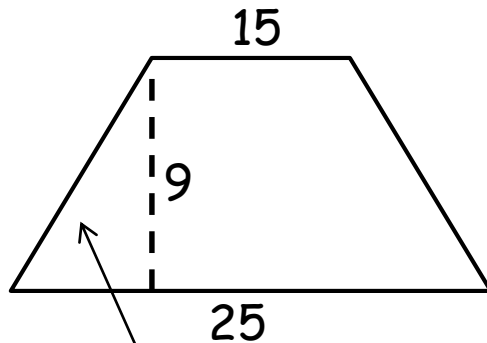$p = 53$

Area and Perimeter of Basic Figures
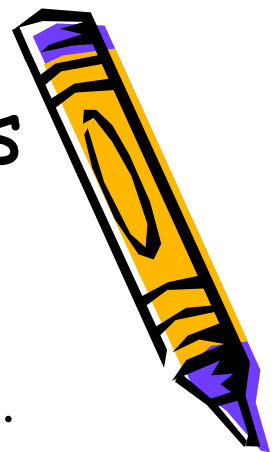
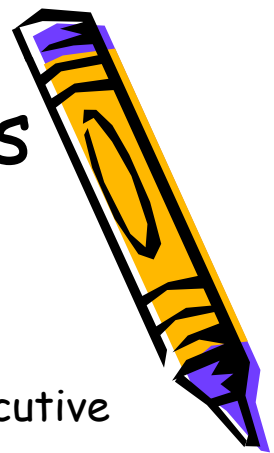Find the area and perimeter of the isosceles trapezoid.

15

9

25

$5^2 + 9^2 = c^2$

$a = \frac{1}{2}(b_1 + b_2)h$

$a = \frac{1}{2}(15 + 25)9$

a = 180

Use pythagorean theorem to find the missing sides of the trapezoid. Since this is an isosceles trapezoid (the legs are congruent), the smaller base must be centers over the longer base.
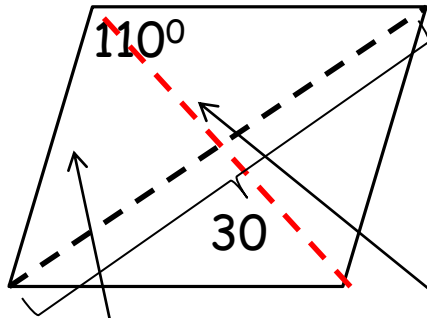
p = 25+15+10.3+10.3

p =60.6

Area and Perimeter of Basic Figures

Find the area and perimeter of the rhombus.

110^0

30

Recall: opposite angles are congruent, consecutive angles are supplementary, diagonals are perpendicular, diagonals bisect opposite angles, diagonals bisect each other.

Draw in second diagonal. Then use trigonometry and/or pythagorean theorem to solve the right triangle for both missing sides.

$sin\ 55 = \frac{15}{hyp}$

$\tan 55 = \frac{15}{adj}$

hyp (side of rhombus) = 18.3

adj ($\frac{1}{2}\ the\ diagonal$) = 10.5

p = 18.3 * 4
p = 73.2

a = $\frac{1}{2}(d_1 * d_2)$

a = $\frac{1}{2}(30 * 21)$

a = 315