

Midpoint and Distance

Midpoint Formula: The midpoint M of segment AB with endpoints  $A(x_1, y_1)$  and B  $(x_2, y_2)$  is found by  $M = ((x_1+x_2/2), (y_1+y_2/2)).$ 

Distance Formula: In a coordinate plane, the distance 'd' between two points  $(x_1, y_1)$  and  $(x_2, y_2)$  is d = the root of  $(x_2-x_1)^2 + (y_2-y_1)^2$ .

Pythagorean Theorem: In a right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse.  $a^2+b^2=c^2$