EXAMPLE Sketch the region given by the set \( \{(x,y)|y < 3\} \)

Distance between the points \( A \) and \( B \) in the plane is

Midpoint of the line segment from \( A \) to \( B \) is

EXAMPLE Which of the points \( A(-6, 3) \) or \( B(3, 0) \) is closer to the point \( C(-2, 1) \)?

EXAMPLE Make a table of values and sketch the graph of the equation. Find the \( x \)- and \( y \)-intercepts and test for symmetry.

\[ y = x^2 + 2 \]
Equation of a circle

Standard form for the equation of a circle with center \( (h, k) \) and radius \( r \) is

EXAMPLE Show that the equation represents a circle, and find the center and radius of the circle.

\[ 2x^2 + 2y^2 - 3x = 0 \]