Sketch the graph of the given equation in a rectangular coordinate system and explain your work:

\[ 8x - 3y = 24. \]

**Solution:** The equation is linear, so its graph is a straight line, \( L \). Let us find two (different) points on \( L \); they will uniquely determine the line.

If \( y = 0 \), then from the above equation \( 8x = 24 \), so \( x = 3 \). Therefore, the point \((3, 0)\) is on \( L \).

If \( x = 0 \), then \(-3y = 24\), so \( y = -8 \). Therefore, the point \((0, -8)\) is on \( L \).

The graph is:

![Graph of 8x - 3y = 24](image)

Figure 1: The graph of \( 8x - 3y = 24 \).