



# Curve generation

Problem: Generate a digital curve

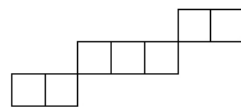
Find a connected sequence of discrete pixels that follows the curve as closely as possible

The curve should be either 4-connected or 8-connected, one pixel wide

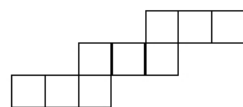


## Connectivity

8-connected: horizontal, vertical and diagonal moves are allowed:



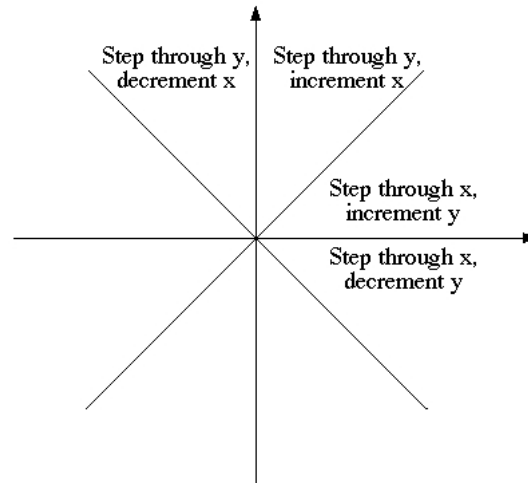
4-connected: diagonal moves are not allowed:



Choose one, don't mix them! 8-connectedness most common for curve generation.



## We need to move differently in different directions



## Two line drawing algorithms:

### The DDA algorithm:

Simple but slow on low-end hardware

### The Bresenham algorithm:

Extremely fast on any hardware