

# DDA

For  $m < 1$ ,

we increase  $x$  by 1  
and calculate  $y$

For  $m > 1$ ,

$y$  will be independent  
variable

so we increase  $y$   
by 1  
and calculate  ~~$x$~~

Now

1. Input  $\rightarrow (x_s, y_s)$  and  $(x_e, y_e)$
2.  $m = (y_e - y_s) / (x_e - x_s)$
3. If  $(m < 1)$  go to step 4  
otherwise go to step 6
4. If  $(x_s > x_e)$ , then swap  $x_s \leftrightarrow x_e$  and  $y_s \leftrightarrow y_e$
5. Initialize  $x = x_s$  and  $y = y_s$   
Loop: setpixel  $(x, y)$  with color  
 $x = x + 1$   
 $y = y + m$ , Round( $y$ )  
if  $(x \leq x_e)$  go to Loop, otherwise exit
6. If  $(y_s > y_e)$ , then swap  $(x_s \leftrightarrow x_e)$  and  $(y_s \leftrightarrow y_e)$
7. Initialize  $x = x_s$  and  $y = y_s$   
Loop: setpixel  $(x, y)$  with color  
 $y = y + 1$   
 $x = x + 1/m$ , Round( $x$ )  
if  $(y \leq y_e)$  go to Loop, otherwise exit