

August 24, 2016

$x$ : line  $\swarrow$

$y = x$   
 $f(x) = x$  }  $y = f(x)$

Forms

①  $y = mx + b$  slope intercept  
 slope  $m$  y-intercept  $\rightarrow (0, b)$

$y = \frac{3}{4}x - 6$   
 $m = \frac{3}{4}$   $b = -6$

②  $ax + by = c$  standard form  
 $y = \frac{3}{4}x - 6$

$4(-\frac{3}{4}x + y) = 4(-6)$   
 $(-\frac{3}{4}x + y) = (-6)$   
 $(-\frac{3}{4}x) + (1 \cdot y) = (-6)$   
 ①  $(-3x + 4y = -24)$   
 $3x - 4y = 24$

Aug 24-10:54 AM

③  $y - y_1 = m(x - x_1)$   
 point-slope form

- Given a point  $(x, y)$
- Given a slope

$(x_1, y_1) = (40, 0)$   $m = \frac{3}{4}$

$y - 0 = \frac{3}{4}(x - 40)$

$y - 24 = \frac{3}{4}x - 30$

$y = \frac{3}{4}x - 6$

$\frac{3}{4} \cdot \frac{40}{1} = \frac{120}{1}$   
 $\frac{3}{4} \cdot -\frac{40}{1} = -30$

Aug 24-11:44 AM

$y = \frac{3}{4}x - 6$

$f(x) = \frac{3}{4}x - 6$  output

↑  
 input

Aug 24-11:34 AM

	machine	output
<u>In</u>		
$x$ 's	rule	$y$ 's
Domain	$\frac{3}{4}x - 6$	range
Independent Variable	$(x, y)$	Dependent Variable
Horizontal Axis	$(x, f(x))$	Vertical Axis
	$(H, V)$	

Aug 24-11:35 AM