

you will be turning this in ↓

1. Describe how to find the slope of a line perpendicular to the line $3x - 4y = 12$. (Your explanation should include the perpendicular slope.)

2. Describe how to graph & shade this:

$3x - 5y > 15$. Be sure to include the graph!

$$3x - 4y = 12$$

$$-4y = -3x + 12$$

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

$$m = \frac{3}{4}$$

$$m_{\perp} = -\frac{4}{3}$$

$$3x - 5y > 15$$

$$3x - 5y = 15$$

$$3x = 15$$

$$x = 5$$

$$(5, 0)$$

$$-5y = 15$$

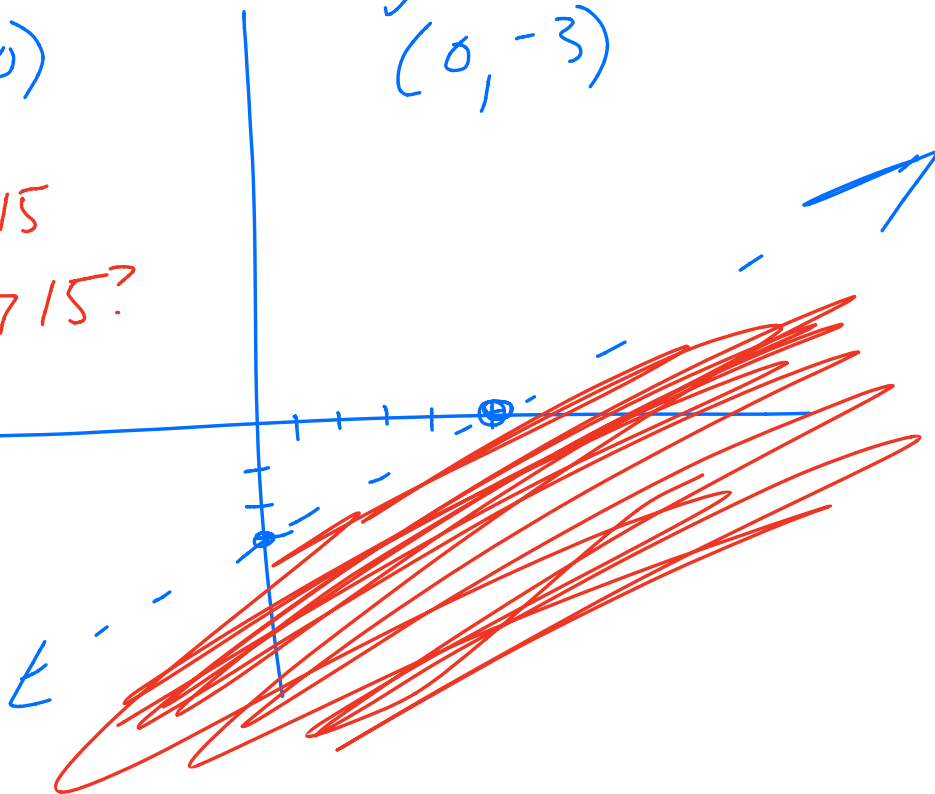
$$y = -3$$

$$(0, -3)$$

$$3x - 5y > 15$$
$$3 \cdot 0 - 5 \cdot 0 > 15?$$

$$0 > 15$$

NB!



$$3x - 5y > 15$$

$$\begin{array}{r} -5y > -3x + 15 \\ \hline -5 & -5 \end{array}$$

$$y < \frac{3}{5}x - 3$$

Is $0 < \frac{3}{5} \cdot 0 - 3$?

$0 < -3$? No.

STEP functions

$$y = [x-1] + 2$$

x	0	0.1	0.2	0.7	1
y	1	1	1	1	2

$$[0-1] + 2$$

$$[-1] + 2$$

$$-1 + 2$$

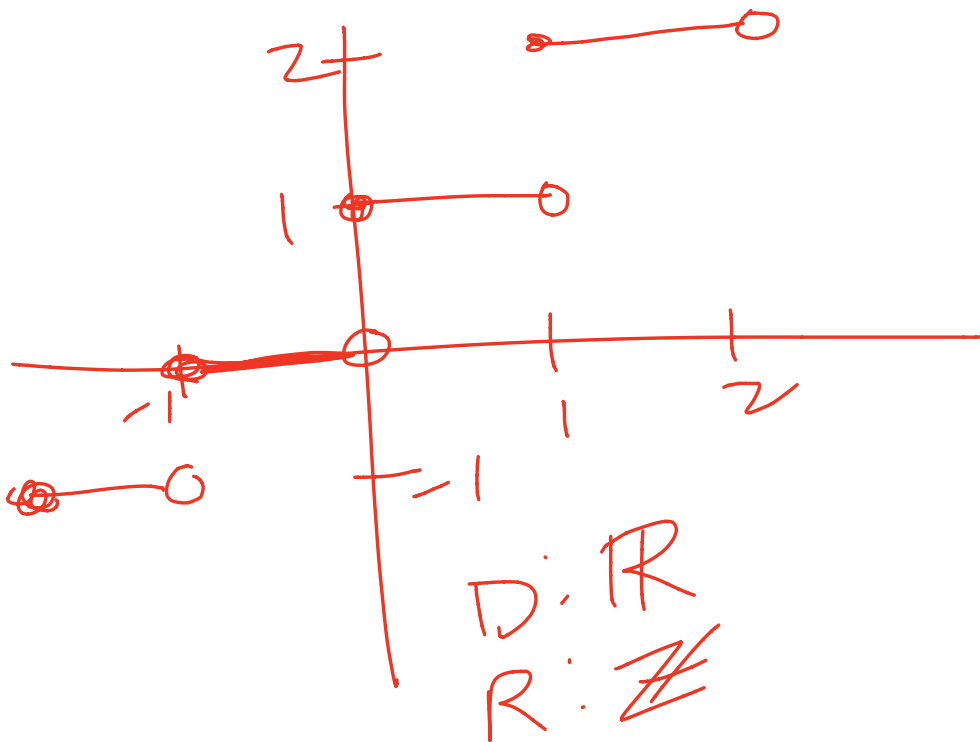
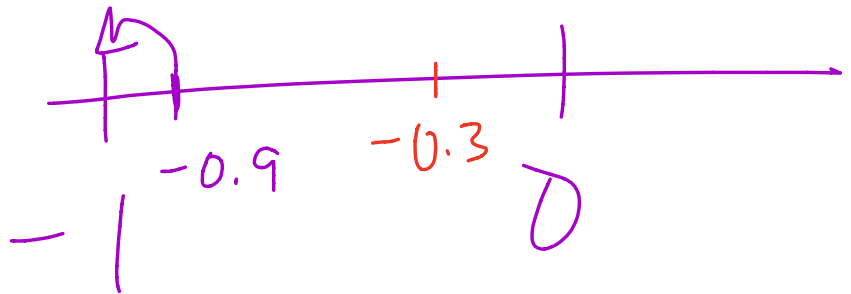
1

$$[0.7-1] + 2$$

$$[-0.3] + 2$$

$$-1 + 2$$

1



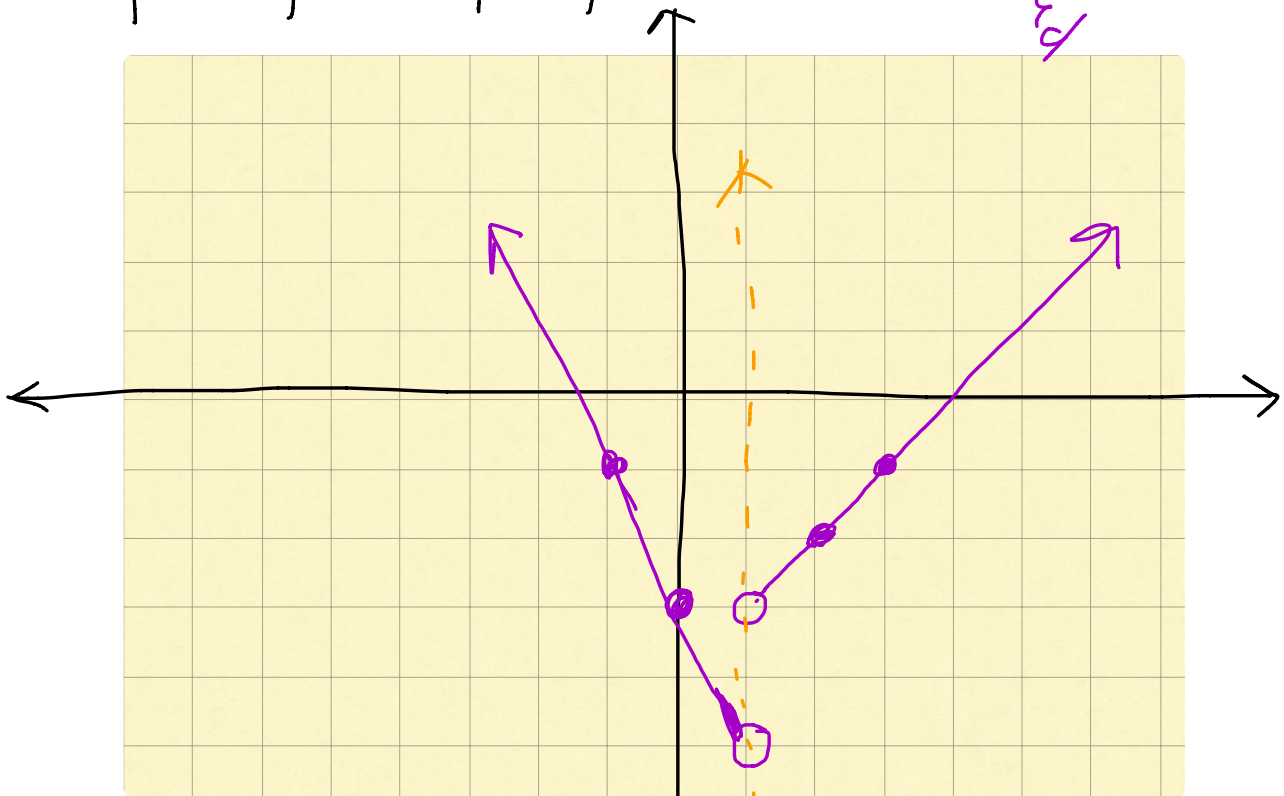
D: \mathbb{R}

R: \mathbb{Z}

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$$g(x) = \begin{cases} \text{neg. slope} & \text{if } x < 1 \\ -2x - 3 & \\ \text{positive slope} & \text{if } x \geq 1 \\ x - 4 & \end{cases}$$

x	-1	-0.5	0	0.5	0.9	1	1.1	2	3
y	-1	-2	-3	-4	-4.8	undefined	-2.9	-2	-1



$$D: \mathbb{R}, x \neq 1 \quad \downarrow \begin{matrix} \vdots \\ \checkmark \end{matrix}$$
$$\text{Range: } (-5, \infty)$$

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$$-\frac{1}{5}y = x + 4$$

$$x\text{-int} \rightarrow y = 0$$

$$-\frac{1}{5} \cdot 0 = x + 4$$

$$0 = x + 4$$

$$x = -4$$

$$(-4, 0)$$

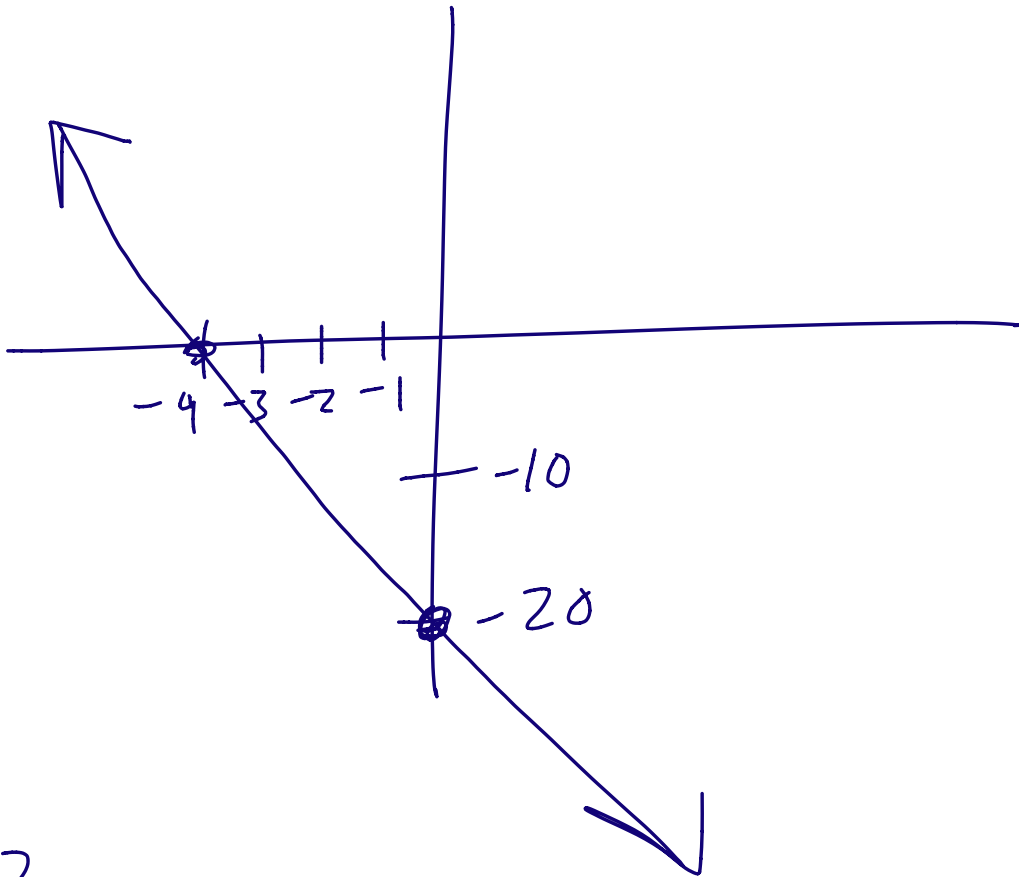
$$y\text{-int: } x = 0$$

$$-\frac{1}{5}y = 0 + 4$$

$$-5 \cdot -\frac{1}{5}y = 4 \cdot -5$$

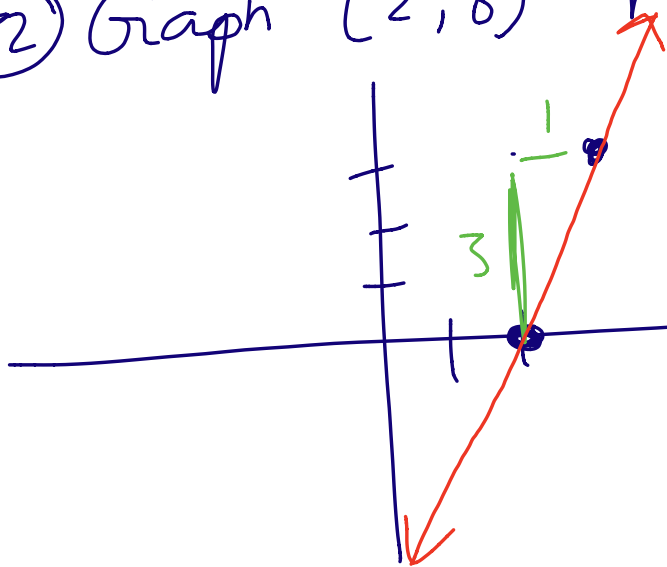
$$y = -20$$

$$(0, -20)$$



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32 Graph $(2, 0)$ $m = 3$



$$y = mx + b$$

$$0 = 3 \cdot 2 + b$$

$$0 = 6 + b$$

$$b = -6$$

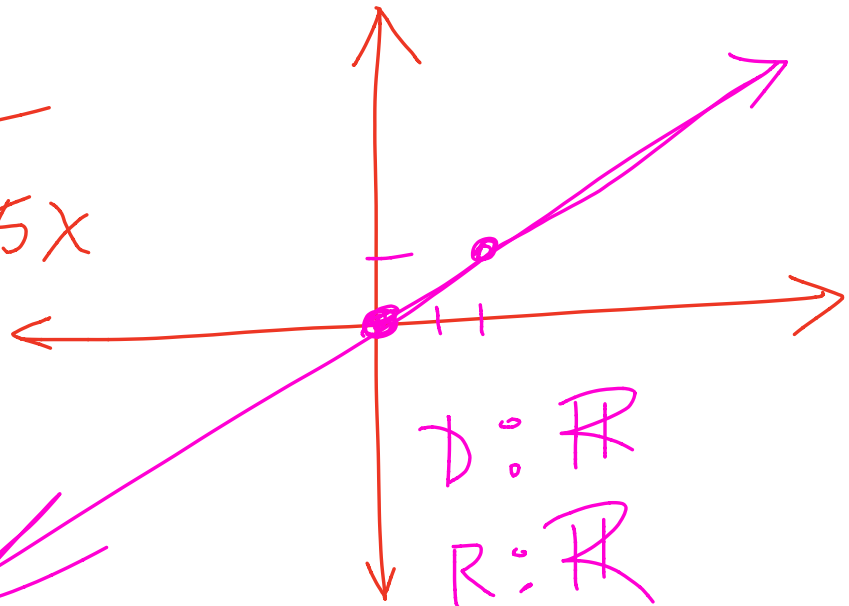
$$y = 3x - 6$$

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$$y = 0.5x$$

$$y = \frac{1}{2}x$$

Line (or)



Yes. This is a function.

#32

passes through
(2, 0)

parallel $\rightarrow m = 3$

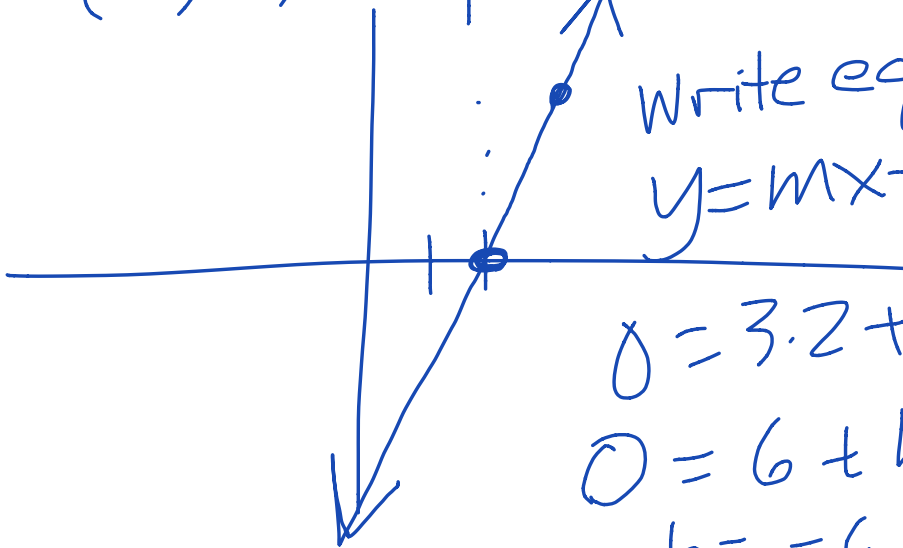
Write equation.

$$y = mx + b$$

$$0 = 3 \cdot 2 + b$$

$$0 = 6 + b$$

$$\underline{b = -6}$$



$$y = -3x - 6$$