

Notes 3-2

Algebra 1
11-12-13

$$y = \frac{2}{3}x + 2$$

	x	$y = \frac{2}{3}x + 2$	y
$\frac{2}{3}(-5) = -3$	-5	$y = \frac{2}{3}(-5) + 2$	-1
	0	$y = \frac{2}{3}(0) + 2$	2
$\frac{2}{3}(3) = 2$	5	$y = \frac{2}{3}(5) + 2$	5
$\frac{2}{3}(10) = 6$	10	$y = \frac{2}{3}(10) + 2$	8

① $y - 5 = 2x - 3 \rightarrow$ need to simplify

$$\begin{array}{r} y - 5 = 2x - 3 \\ +5 \quad +5 \\ \hline y = 2x + 2 \end{array}$$

② $3y + 2 = 3x - 7$

$$\begin{array}{r} 3y + 2 = 3x - 7 \\ -2 \quad -2 \rightarrow \text{subtract } -2 \text{ from both sides} \\ \hline 3y = 3x - 9 \\ \frac{3y}{3} = \frac{3x - 9}{3} \rightarrow \text{divide all values by } 3 \\ \boxed{y = x - 3} \rightarrow \text{this is ready to graph} \end{array}$$

③ $y + 4 = -2x - 1$

$$\begin{array}{r} y + 4 = -2x - 1 \\ -4 \quad -4 \\ \hline y = -2x - 5 \rightarrow \text{graph} \end{array}$$

④ $3y - 2 = 2x + 4$

$$\begin{array}{r} 3y - 2 = 2x + 4 \\ +2 \quad +2 \\ \hline 3y = 2x + 6 \\ \frac{3y}{3} = \frac{2x + 6}{3} \end{array}$$

x	$y = -2x - 5$	y
-2	$y = -2(-2) - 5$ $+4 - 5$	-1
0	$y = -2(0) - 5$ $0 - 5$	-5
1	$y = -2(1) - 5$ $-2 - 5$	-7
2	$y = -2(2) - 5$ $-4 - 5$	-9

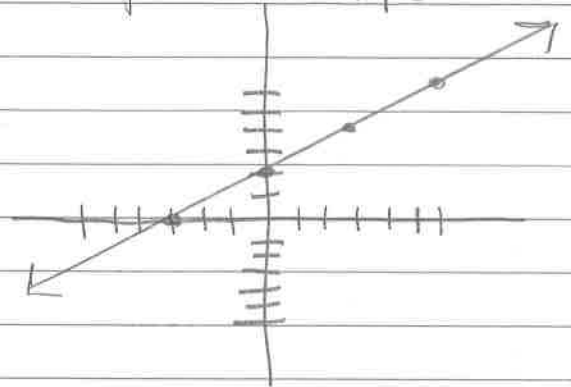
$y = \frac{2}{3}x + 2 \rightarrow$ graph

x	$y = \frac{2}{3}x + 2$	y
-3	$y = \frac{2}{3}(-3) + 2$ $-2 + 2$	0
0	$y = \frac{2}{3}(0) + 2$ $0 + 2$	2
3	$y = \frac{2}{3}(3) + 2$ $2 + 2$	4
6	$y = \frac{2}{3}(6) + 2$ $4 + 2$	6

$$y = \frac{2}{3}x + 2$$

x	$y = \frac{2}{3}x + 2$	y
-3	$\frac{2}{3}(-3) + 2$	0
-1	$2(-1) + 2$	
0	$\frac{2}{3}(0) + 2$	2
3	$\frac{2}{3}(3) + 2$	4
	$2(1) + 2$	
6	$\frac{2}{3}(6) + 2$	6
	$2(2) + 2$	

positive slope $m = \frac{2}{3}$



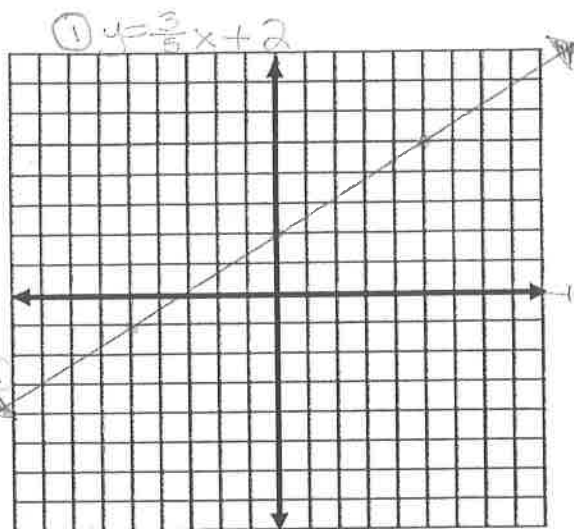
$$y = -\frac{2}{3}x + 4$$

x	$y = -\frac{2}{3}x + 4$	y
-5	$y = -\frac{2}{3}(-5) + 4$	6
	$= -2(-1) + 4$	
0	$y = -\frac{2}{3}(0) + 4$	4
5	$y = -\frac{2}{3}(5) + 4$	2
	$-2(1) + 4$	
10	$y = -\frac{2}{3}(10) + 4$	0
	$-2(2) + 4$	

Notes 3-2

$$y = \frac{3}{5}x + 2$$

	X	$y = \frac{3}{5}x + 2$	Y
$\frac{3}{5}(-5) = -3$	-5	$y = \frac{3}{5}(-5) + 2$	-1
	0	$y = \frac{3}{5}(0) + 2$	2
$\frac{3}{5}(5) = 3$	5	$y = \frac{3}{5}(5) + 2$	5
$\frac{3}{5}(10) = 6$	10	$y = \frac{3}{5}(10) + 2$	8



Algebra I
11-13-13

①
$$\begin{array}{r} u - 5 = 2x - 3 \\ +5 \qquad +5 \\ \hline u = 2x + 2 \end{array} \rightarrow \text{need to simplify}$$

②
$$\begin{array}{r} 3y + 2 = 3x - 7 \\ -2 \qquad -2 \\ \hline 3y = 3x - 9 \\ \frac{3y}{3} = \frac{3x - 9}{3} \rightarrow \text{divide all values by 3} \\ \boxed{y = x - 3} \rightarrow \text{this is ready to graph} \end{array}$$

③
$$\begin{array}{r} y + 4 = -2x - 1 \\ -4 \qquad -4 \\ \hline y = -2x - 5 \rightarrow \text{graph} \end{array}$$

④
$$\begin{array}{r} 3y - 2 = 2x + 4 \\ +2 \qquad +2 \\ \hline 3y = 2x + 6 \\ \frac{3y}{3} = \frac{2x + 6}{3} \end{array}$$

$y = -2x - 5 \rightarrow \text{graph}$

X	$y = -2x - 5$	Y
-2	$y = -2(-2) - 5$	-1
0	$y = -2(0) - 5$	-5
1	$y = -2(1) - 5$	-7
2	$y = -2(2) - 5$	-9

$y = \frac{2}{3}x + 2 \rightarrow \text{graph}$

X	$y = \frac{2}{3}x + 2$	Y
-3	$y = \frac{2}{3}(-3) + 2$	0
0	$y = \frac{2}{3}(0) + 2$	2
3	$y = \frac{2}{3}(3) + 2$	4
6	$y = \frac{2}{3}(6) + 2$	6

Target 3-2

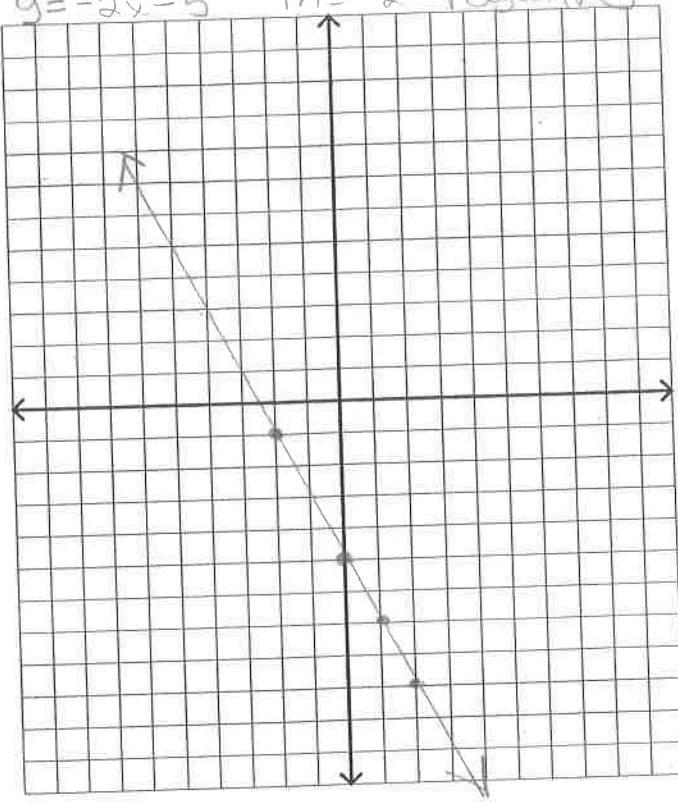
Graphing

Name: _____

Date: _____

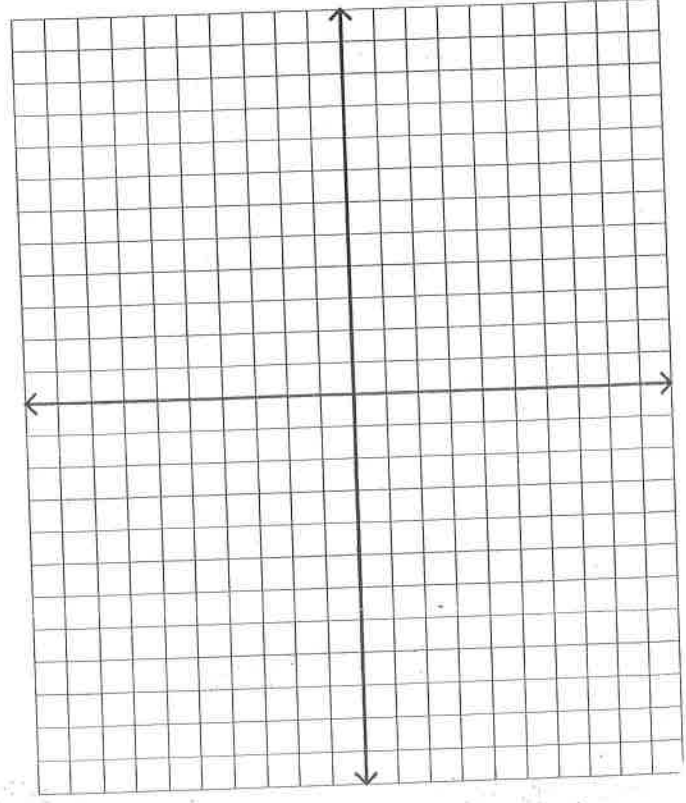
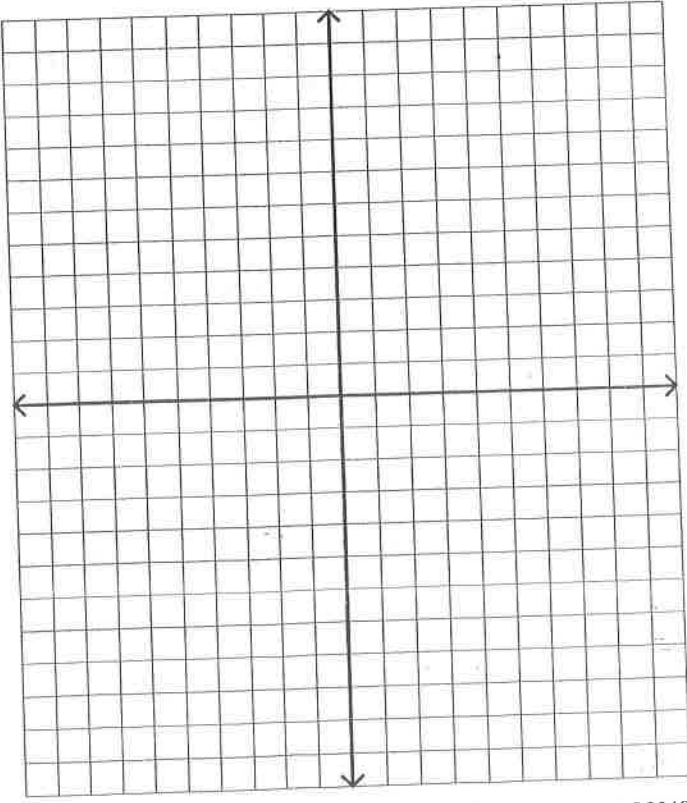
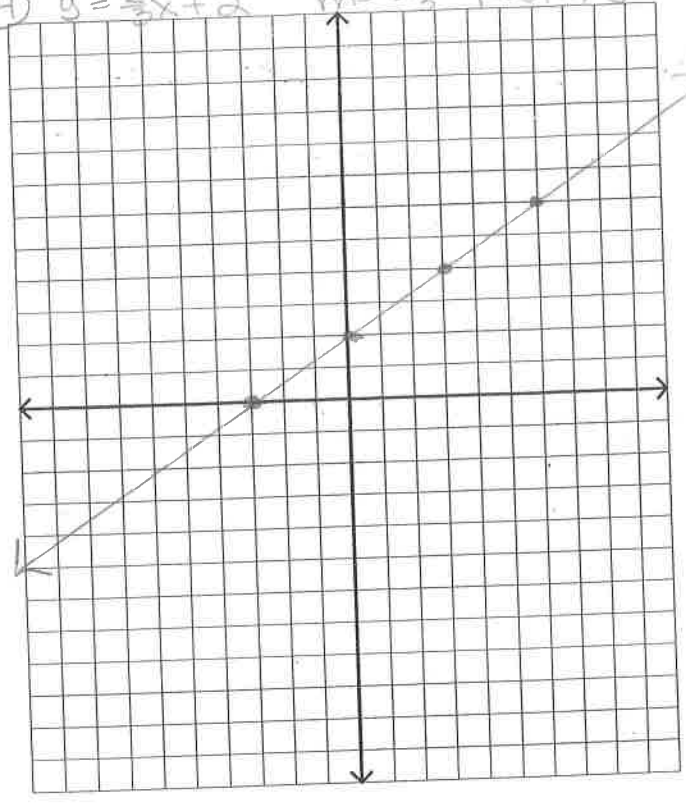
3

$y = -2x - 5$ $m = -2$ negative



4

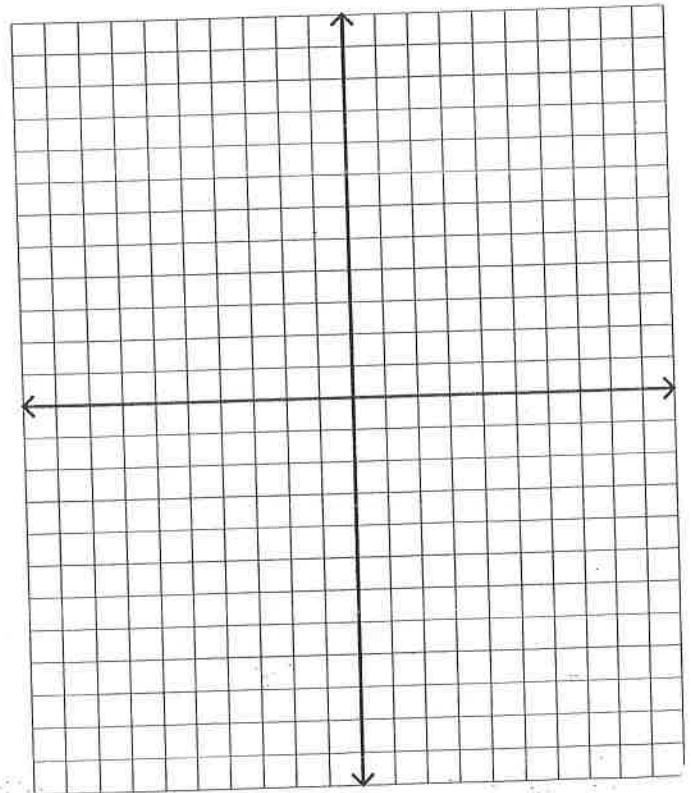
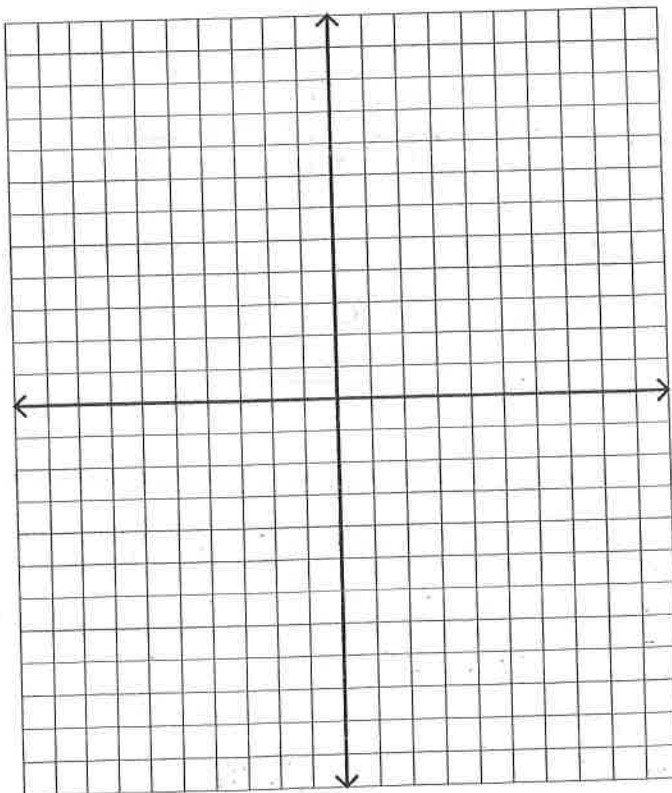
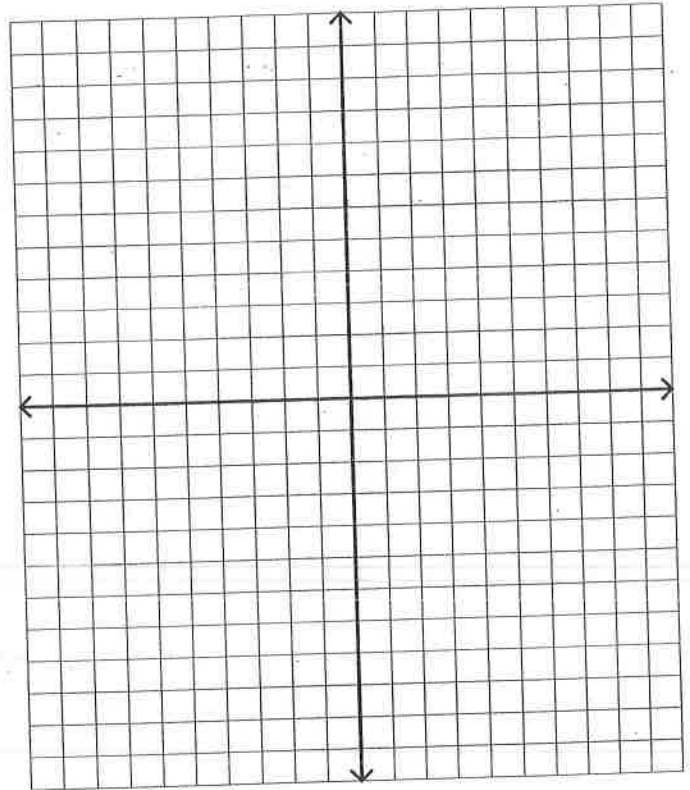
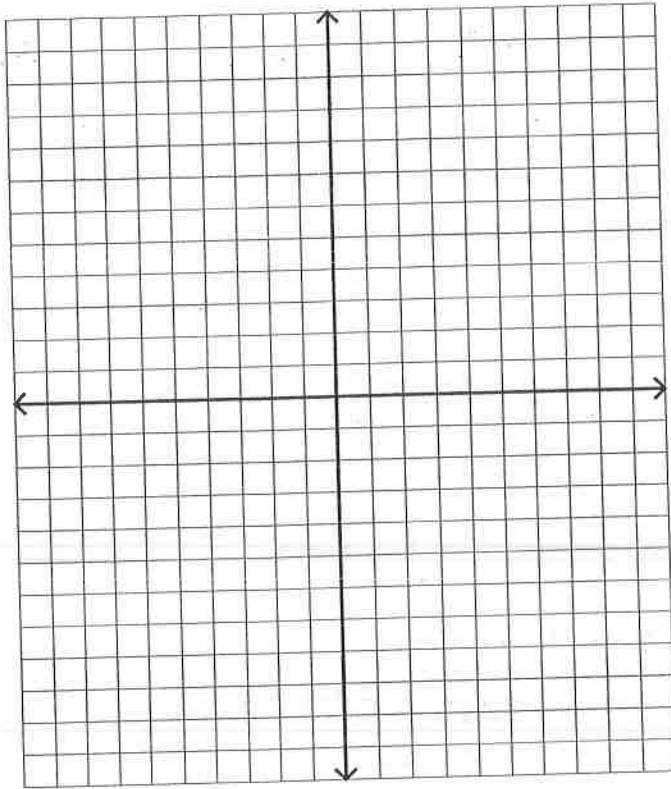
$y = \frac{2}{3}x + 2$ $m = \frac{2}{3}$ positive



Graphing

Name: _____

Date: _____



Notes Target 3-3

Algebra 1

Find x and y intercepts and explain what they mean in the real world

11-12-13

Linear Equations - makes a line

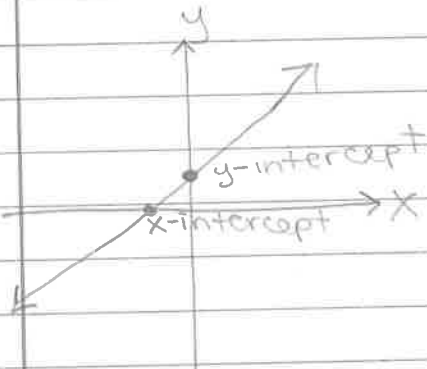
$$y = 3x + 4$$

$$y = -\frac{2}{3}x + 1$$

Standard Form

$$5x + 4y = 20$$

- x and y on same side
- no fractions



→ Are the following linear? If so, write them in standard form.

① $y = 4x + 2 \rightarrow$ yes linear

$$-4x - 4x$$

$$y - 4x = 2$$

$$\boxed{-4x + y = 2}$$
 commutative property

② $5x^2 - 4y = 4 \rightarrow$ not linear

③ $y = 3 - 2$

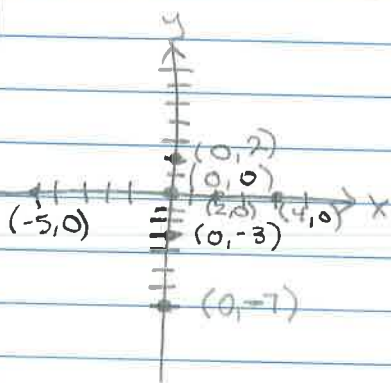
$$y = 1 \rightarrow$$
 yes linear

x	y
-2	1
0	1
1	1
2	1

} can plot these points

④ $3xy - 2 = 1 \rightarrow$ not linear
 b/c $x + y$ are multiplied

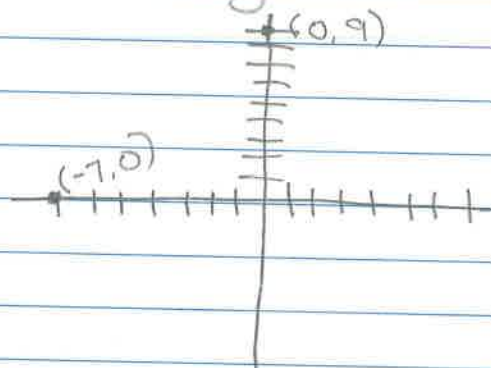
⑤ $12x = 3y - 10y$
 $12x = -7y$
 $+7y \quad +7y$
 $12x + 7y = 0 \rightarrow$ yes linear



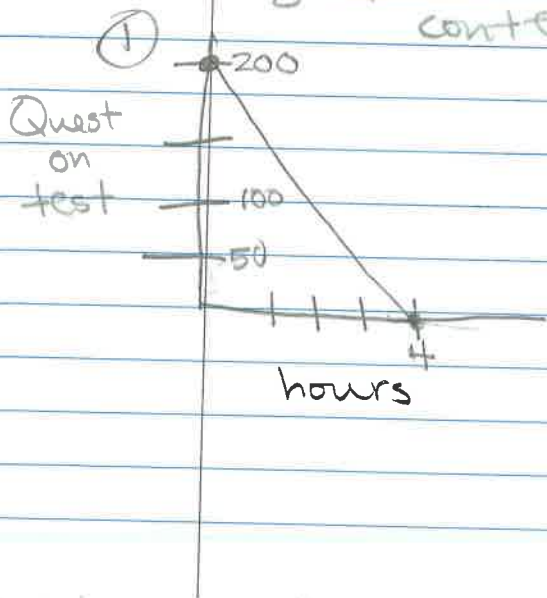
- the x-value is 0 everytime
 - where a line touches the y-axis
 the x-value will always be 0
 - where a line touches the x-axis
 the y-value will always be 0

x-intercept
 $(-7, 0)$

y-intercept
 $(0, 9)$



Find the x and y-intercepts of the segment graphed, describe their meaning in the context.

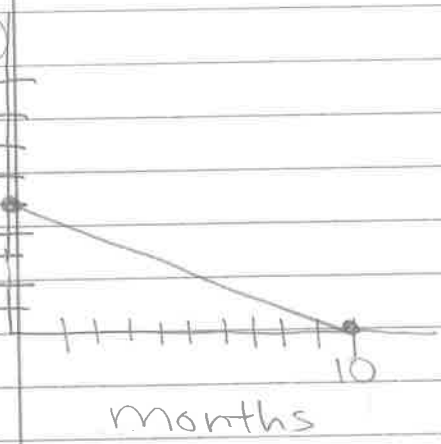


(x, y) (hours, questions on test)

\rightarrow x-intercept $(4, 0)$
 After 4 hours, there are no more questions
 \rightarrow y-intercept $(0, 200)$
 When you started the test, there were 200 questions

3-3 continued

money in bank



(months, money in bank)

x-int (10, 0)

y-int (0, 250)

A bank acct was opened with \$250.

After 10 months, the \$250 was spent, for a balance of 0.

3 Analyze tables

# of gas stops	Amount of \$
0	125
1	100
2	75
3	50
4	25
5	0

1 Find the x and y intercepts

4 $4x - y = 4$

x	$4x - y = 4$	y
pick 0 → 0	$-y = 4$ $y = -4$	-4
2	$4(2) - y = 4$ $8 - y = 4$ $-y = -4$	4
1	$4(1) - y = 4$ $4 - y = 4$	
1	$4x - 0 = 4$ $4x = 4$ $x = 1$	0 ← pick 0

Home work: p 159 # 13-35 all, 51-55 odd

