10-28-13

Review Test 2

via Q5, 6, and 7.

Quizzes 5, 6, 7.

Q5

(3.) $y = 5x + 8 \Rightarrow y = 0 + 8$

(0, 8) yes!

(0, 8)

x	y
0	$y = 0 + 8$

(5.) $y = x - 2$ (3, 1); (-2, -4)

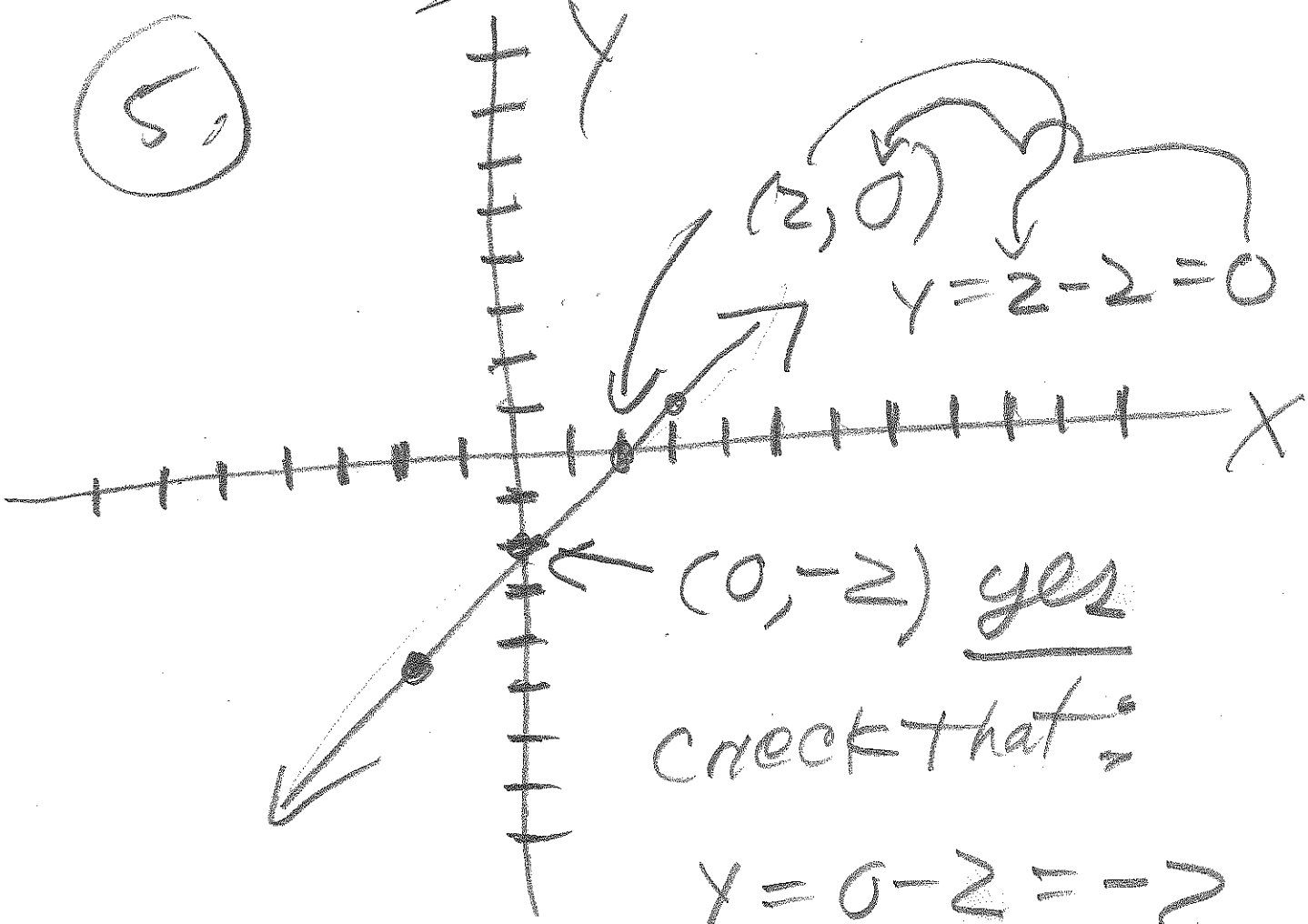
x	y	TRUE
3	1	yes
-2	-4	yes

$y = 3 - 2 = 1$

$x = -2 - 2 = -4$

Q5

(5,)



yes

check that:

$Y = 0 - 2 = -2$

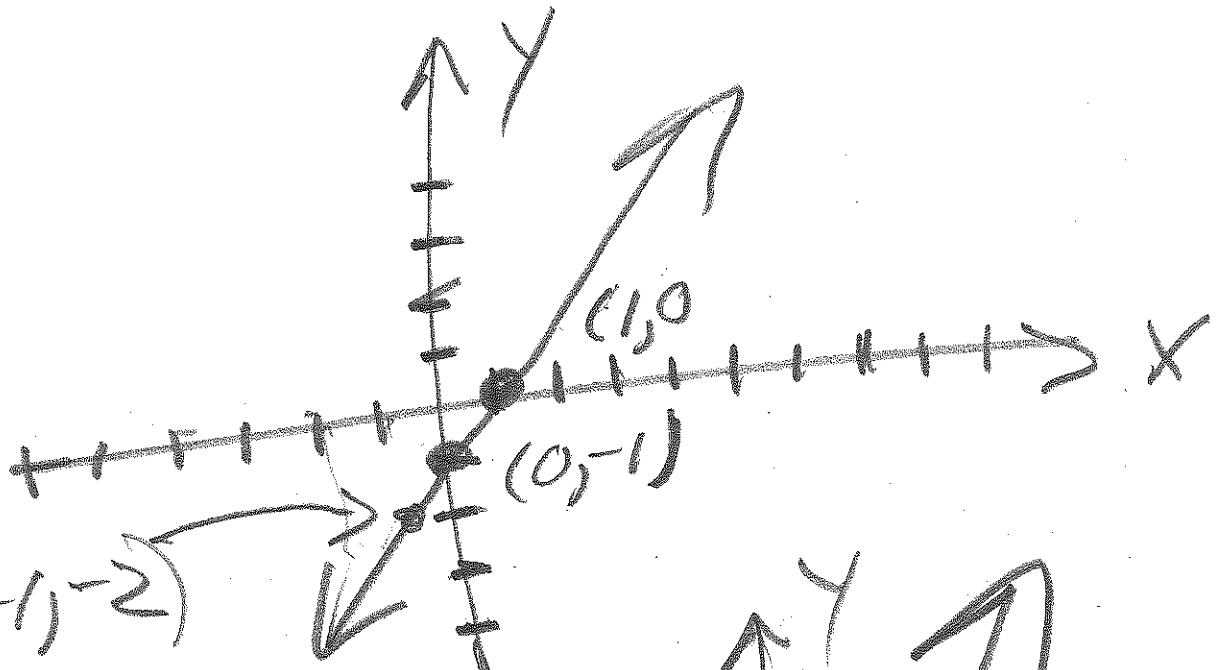
$Y = X - 2 = -2$

$\downarrow$

0 $\boxed{(0,-2)}$

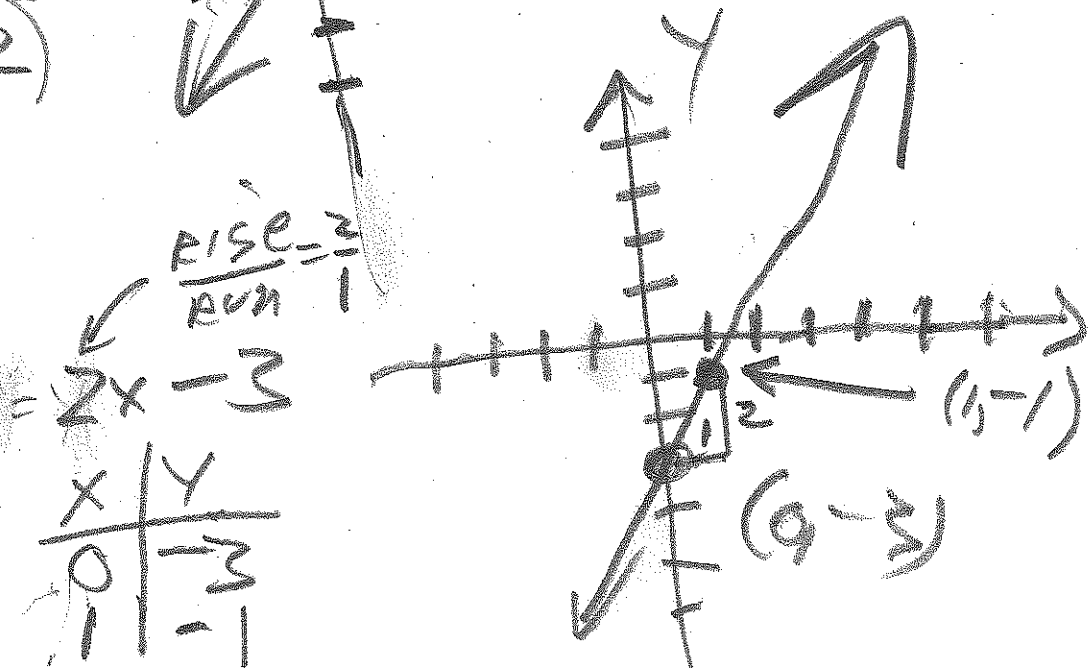
(6) $y = x - 1$

x	y	work
0	-1	$y = 0 - 1 = -1$
1	0	$y = 1 - 1 = 0$
-1	-2	



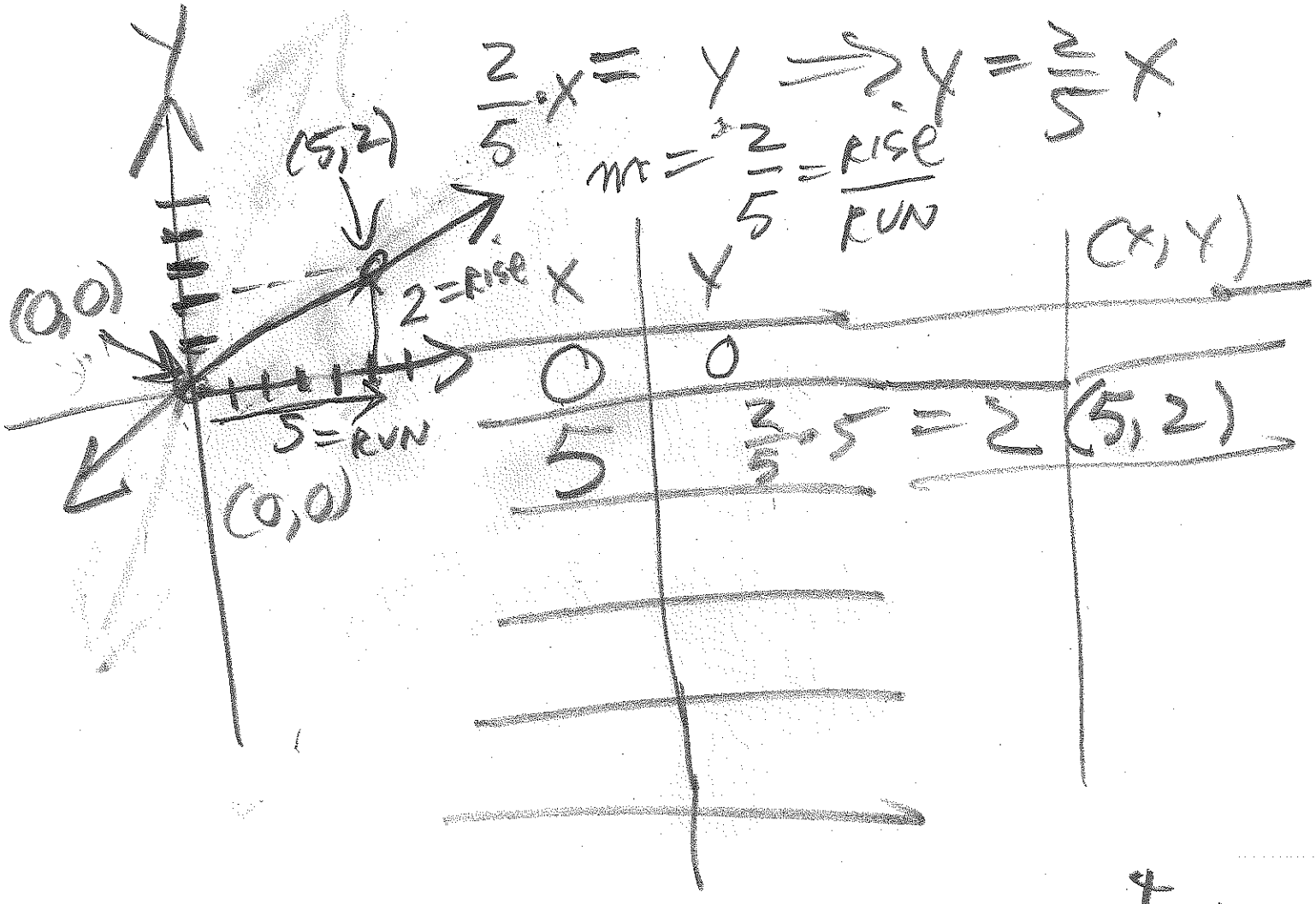
(7) $y = 2x - 3$

x	y
0	-3
1	-1



Q5

(9) $2x = 5y$ by 1st solving for y.



tip: $y = \frac{3}{7}x$; $y = \frac{4}{13} \cdot x$

CHOOSE 7, 5 CHOOSE 13

Q5

$8x - 4y = 12$
$+4y \quad +4y$
$8x = 12 + 4y$
$-12 \quad -12$
$8x - 12 = 4y$

(10.) $8x - 4y = 12$
$+4y \quad +4y$
$8x = 4y + 12$
$2x - 3 = y$ → $y = 2x - 3$

(11.) $4x - 2y = 8$
$+2y = +2y$
$4x = 2y + 8$
$-8 \quad -8$
$4x - 8 = 2y$ → $y = 2x - 4$

(12.) $x + 5y = 10$
$-x \quad -x$
$5y = -x + 10$
$\frac{5y}{5} = \frac{-x}{5} + \frac{10}{5}$
$y = -\frac{1}{5}x + 2$

Q5

(12)

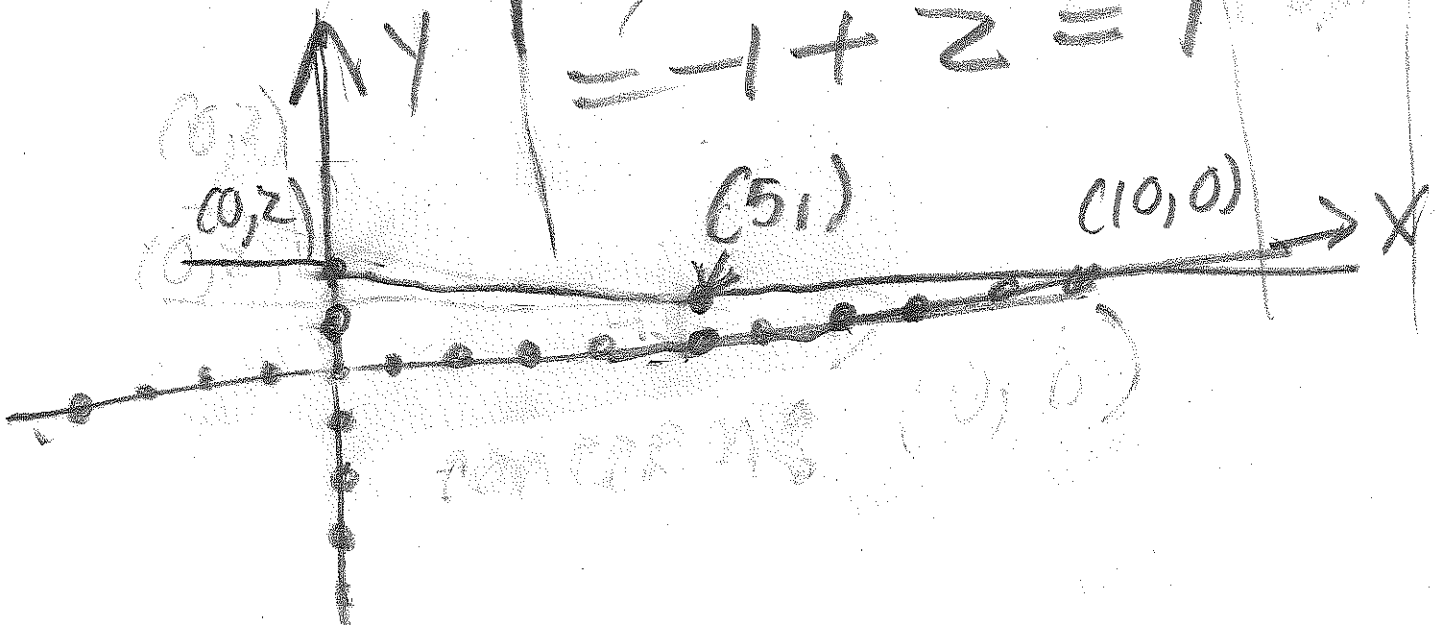
(6)

$$y = -\frac{1}{5}x + 2$$

2 ways:

1. table way and RISE/RUN WAY:

x	y	
0	2	(0,2)
5	$-\frac{1}{5}\cdot 5 + 2 = -1 + 2 = 1$	(5,1)



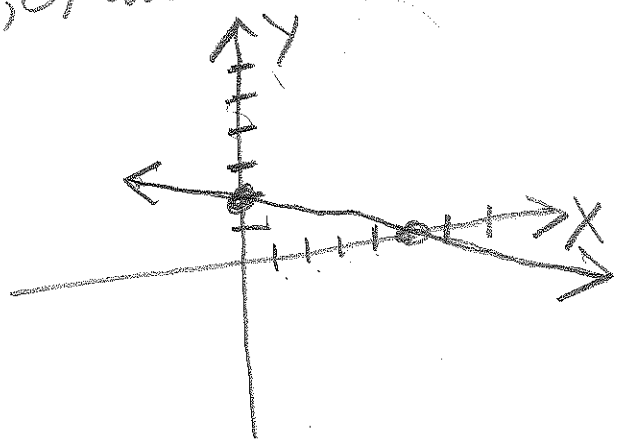
Quiz 6

① $2x+5y=10$

$x=0 \Rightarrow y=2$

$y=0 \Rightarrow x=5$

$(5,0)$ and $(0,2)$

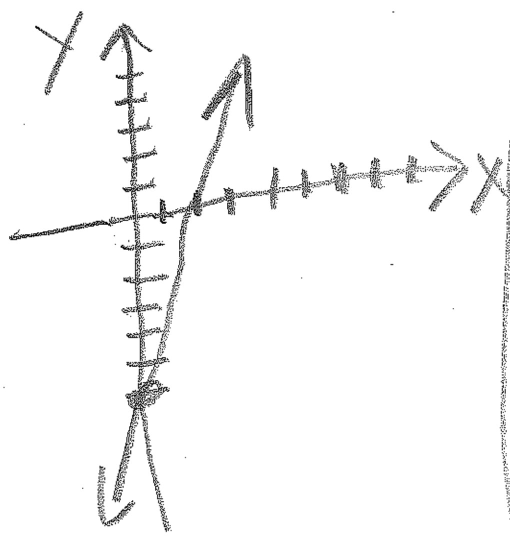


② $6x-2y=12$

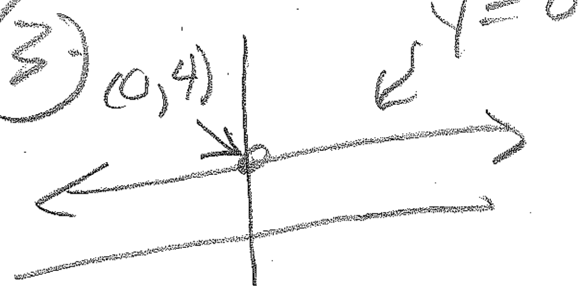
$x=0 \Rightarrow y=-6$

$y=0 \Rightarrow x=2$

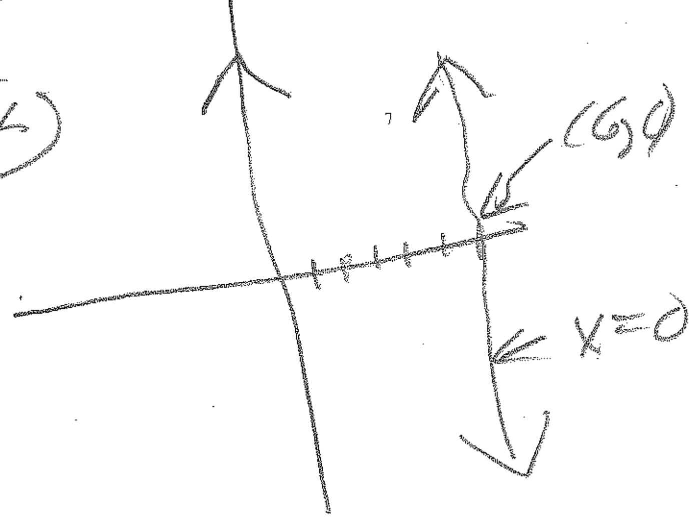
$(2,0)$ and $(0,-6)$



③



④

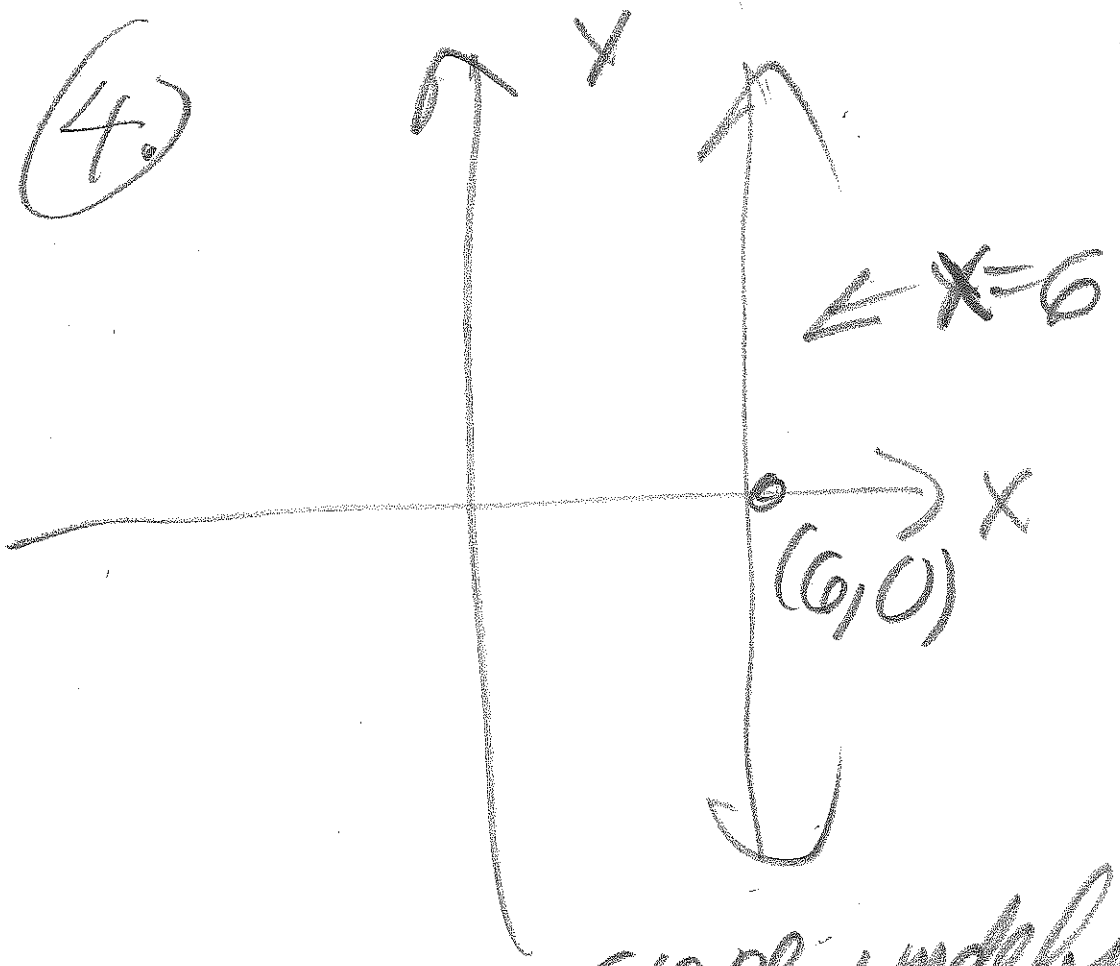


⑤

see next page

Q6

(4.)



slope undefined

(5.)

(a) time = 5h

(a.) $110 / 5h = $22/h

195
−93
102 pgs

PAY $110

(6.) $\frac{(1,4)-(3,6)}{-2,-2}$

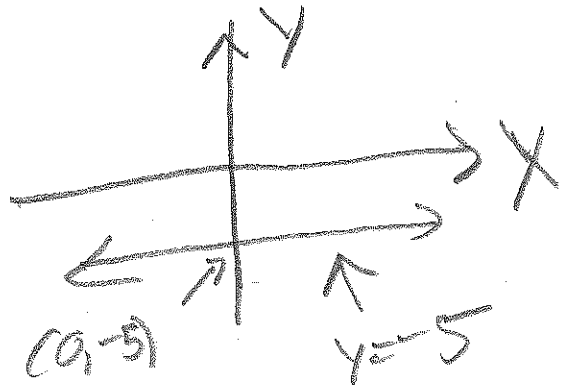
$\text{slope} = \frac{-2}{-2} = 1$

(7.) $\frac{(0,5)-(-3,0)}{3,5}$

$\text{slope} = \frac{5}{3}$

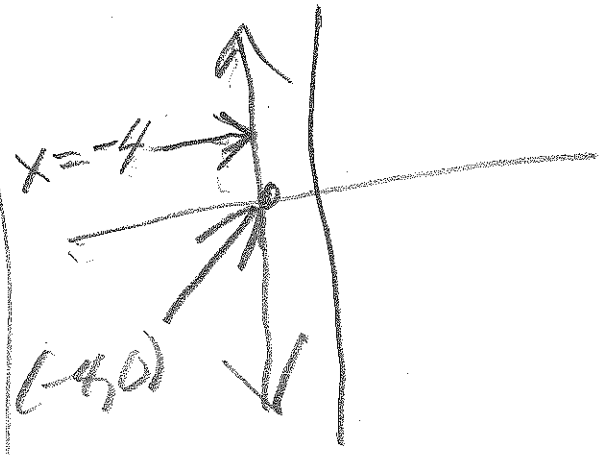
(8.) $y = -5$

slope $= 0$



(9.) $x = -4$

undefined slope

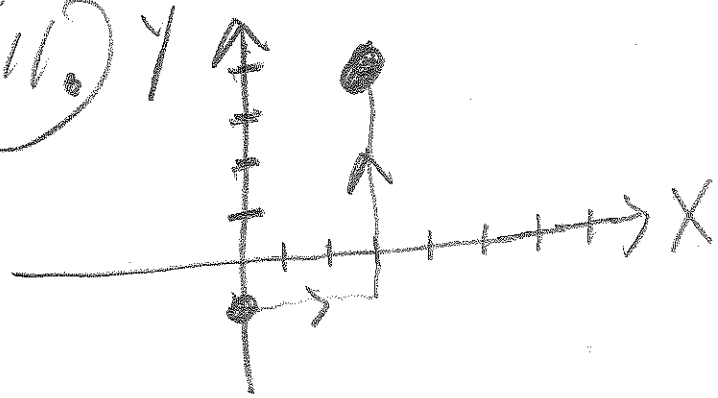


(10.) slope

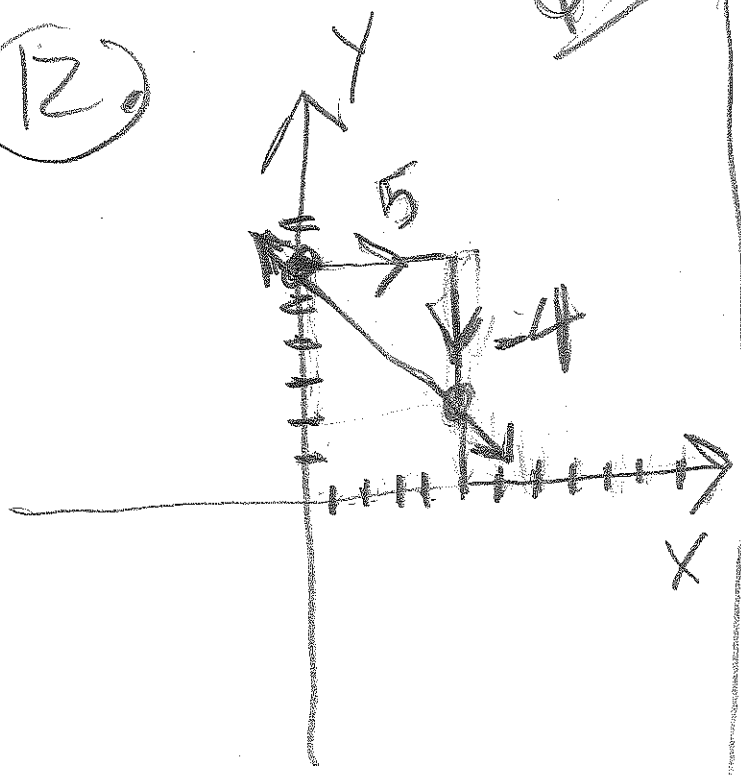
$= \frac{-28}{1080} = -0.025$

$$
\begin{array}{r}
0.0250 \\
1080\overline{)\,28.0000} \\
-\,2160\downarrow \\
\hline
6400 \\
5400\downarrow \\
\hline
1000
\end{array}
$$

(11.)



(12.)



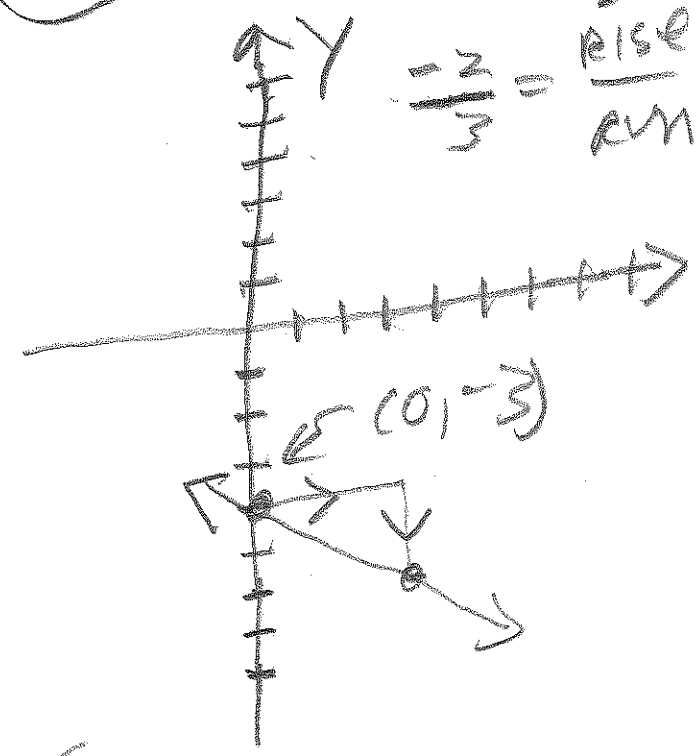
(15.) $(0, b) = (0, 4)$

$m = -5/7$

$y = -\frac{5}{7}x + 4$

(16.) $y = -\frac{2}{3}x - 3$

$-\frac{2}{3} = \frac{\text{rise}}{\text{run}}$



(13.) $m = -\frac{3}{8}$

$(0, b) = (0, 4)$

(14.) $3x + 4y = 12$

$-3x \quad -3x$

$4y = -3x + 12$

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

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

$(0, b) = (0, 3)$

(17.) $y = -\frac{1}{3}x - 2$

$y = -\frac{2}{6}x + 5$

since $-\frac{2}{6} = -\frac{1}{3}$: parallel lines.

96

(18) $m = \frac{3}{2}$; $(-3, 4)$

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

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

(19) $m = 3$; $(6, 2)$

$y - 2 = 3(x - 6)$

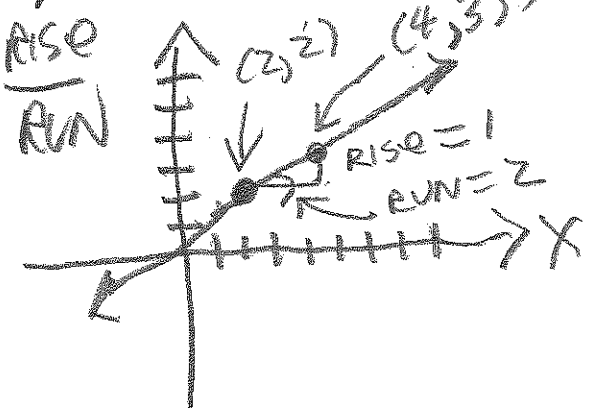
$y - 2 = 3x - 18$

$+2 \qquad +2$

$y = 3x - 16$

(20) $y - 2 = \frac{1}{2}(x - 2)$

$\frac{1}{2} = \frac{\text{RISE}}{\text{RUN}}$



(21) (1, 4) yes!

(A) $5x - 2y = -3$

(B) $7x - 3y = -5$

(A) $5 \cdot 1 - 2 \cdot 4 = -3$ TRUE

$5 - 8 = -3$

$-3 = -3$ TRUE

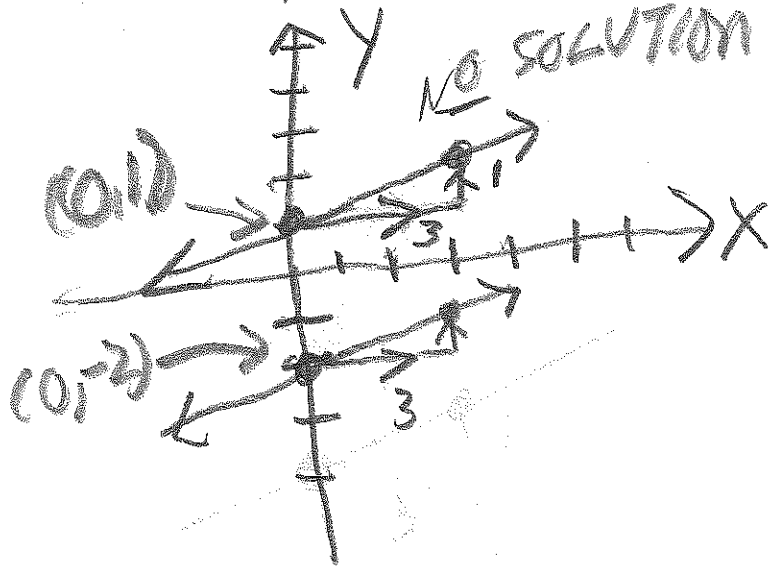
(B) $7 \cdot 1 - 3 \cdot 4 = -5$ TRUE

$7 - 12 = -5$

$-5 = -5$ TRUE

(22) SINCE SLOPES ARE THE SAME, LINES ARE PARALLEL (NO solution)

NO SOLUTION



(23.)

$x + y = 5$ (A)

$x = y + 1$ (B)

sub. (B) into (A)

(A.) $y + 1 + y = 5$

$2y + 1 = 5$

$2y = 4$

$y = 2$

(B.) $x = 2 + 1 = 3$

$(3, 2)$

(24.) $x = y - 6$ (A)

$3x + 2y = 2$ (B)

(B.) $3(y - 6) + 2y = 2$

$3y - 18 + 2y = 2$

$5y = 20$

$y = 4$

(A.) $x = y - 6$

$x = 4 - 6$

$x = -2$

$(-2, 4)$

(25.) $x - y = 2$ (A)

$x + y = -4$ (B)

(A.) $x = y + 2$ solve (A) for x

(B.) $y + 2 + y = -4$

$2y = -6$

$y = -3$

(A.) $x = -3 + 2 = -1$

$(-1, -3)$

Q6

(13

(20) (133, 47)

(A) $x + y = 180$

(B) x is $3y - 8$

$x = 3y - 8$

$3y - 8 + y = 180$

$4y - 8 = 180$

$4y = 188$

$\frac{4y}{4} = \frac{188}{4}$

$y = 47$ and (B) $x = 3 \cdot 47 - 8$

$= 141 - 8 = \boxed{133}$

Q2

(1.) $x+y=5$ (A.)

$x-y=3$ (B.)

A+B $2x+0=8$

$2x=8$

$x=4$

(A.) $4+y=5$

$y=1$

$(4,1)$

(2.) $-2(x-y=3)$ (A.)

$2x-3y=-1$ (B.)

$\rightarrow -2x+2y=-6$ new (A.)

$2x-3y=-1$ (B.)

(2) Q7 (15

$0 + y = -7$

$-y = -7$

$-a = -b$

$a = b$

$\rightarrow y = 7$

OLD (A) $x - y = 3$

$x - 7 = 3$

$x = 10$

$(10, 7)$

(42)

amt. $x + y = 80$

alcohol $(0.02)x + (0.05)y = (0.03)\cdot 80$

$\rightarrow x + y = 80$

$0.02x + 0.05y = 2.4$

$\times 2 \quad \times 2 \quad \times 2$

$x + y = 80$ (A)

$2x + 5y = 240$ (B)

new (A) $\rightarrow y = 80 - x$

Q7

(7

(4)

new (A) $y = 80 - x$

$2 \cdot x + 5 \cdot (80 - x) = 240$

$2x + 400 - 5x = 240$

$-3x + 400 = 240$

$-400 \quad -400$

$-3x = -160$

$3x = 160$

$x = \frac{160}{3}$

$x = 53\frac{1}{3}$ oz

Q7

(A)

(4.)

new (A) $y = 80 - x$

(A) $y = 80.0 - 53.3$

$y = 26.7$ oz

$$\begin{array}{r} 29 \\ 80.0 \\ 53.3 \\ \hline 26.7 \end{array}$$

Elimination:

$-2(x + y = 80)$ A

$-2x + 5y = 240$ B

$-2x - 2y = -160$ A

$2x + 5y = 240$ B

$3y = 80 \rightarrow y = \frac{80}{3}$

$y = 26.7$

Q7 (9

(A)

OLD (A)

$x + y = 80$

$x + 26.7 = 80$

$x = 53.3$

(53.3, 26.7)

SUM = 80

Test 2:

ALSO COVERS 2.6, 2.7°

TIP: see 9.6-13 notes