Solutions. BELOW: Scroll down

TEST 2. CRN 10113 SEC 083 MATH 65 SU14

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1. DETERMINE IF (0, 8) is a solution to y = 5x + 8; SAY *YES OR NO.*
2. GRAPH: y = x + 1. USE A *TABLE.*
3. GRAPH: 3x = 5y by first solving for y. USE A TABLE.
4. GRAPH: 2x + 4y = 8 by first solving for y. USE A TABLE.
5. GRAPH: x + 5y = 10 by first solving for y. USE A TABLE.
6. FIND X AND Y INTERCEPTS AND GRAPH: 2x + 5y = 10
7. JASMINE BEGAN A *DIFFICULT* PROOF READING JOB AT 9:00 AM. SHE STARTED AT THE TOP OF PAGE 93. SHE WORKED UNTIL 1:00 PM THAT DAY AND FINISHED PAGE 103. SHE BILLED THE PUBLISHER $200 FOR THE DAY'S WORK. **(a) Find the rate of pay in dollars per hour.** **(b) Find the rate of pay in dollars per page.** **(c) Find her rate of work *in pages per hour.***
8. FIND THE *SLOPE* OF THE LINE CONTAINING THE PAIR OF POINTS: (2, 8) AND (6, 12) . IF THE SLOPE IS UNDEFINED, SAY SO.
9. FIND THE *SLOPE* OF THE LINE CONTAINING THE PAIR OF POINTS: (2, 8) AND (6, 8). IF THE SLOPE IS UNDEFINED, SAY SO.
10. FIND THE *SLOPE* OF THE LINE CONTAINING THE PAIR OF POINTS: (2, 8) AND (2, 12). IF THE SLOPE IS UNDEFINED, SAY SO.
11. FIND THE *SLOPE* OF THE LINE CONTAINING THE PAIR OF POINTS: (0, 8) AND (6, 4). IF THE SLOPE IS UNDEFINED, SAY SO.
12. Find the slope of each line whose equation is given. If the slope is undefined, say so. In each case *sketch the line*, labeling any x or y intercepts. **(a) y = -3 (b) x = 2**
FOR NEXT EXERCISES, USE SLOPE-INTERCEPT EQUATION y = mx + b, WHERE m IS THE SLOPE AND b IS THE Y-COORDINATE OF Y-INTERCEPT (0, b).
13. DRAW THE LINE THAT HAS THE GIVEN SLOPE m AND Y-INTERCEPT (0,b). **Slope $\frac{3}{4}$; y-intercept (0, 2)**
14. (a) FIND THE SLOPE- INTERCEPT EQUATION (y = mx + b) for the line with this equation: 4x + 3y = 12. HINT: SOLVE FOR y. IDENTIFY m and b; REMEMBER THE Y-INTERCEPT IS (0, b). **(b) GRAPH THE LINE USING TECHNIQUES OF PREVIOUS PROBLEMS OR LECTURE NOTES.**
FOR NEXT EXERCISES, USE *POINT-SLOPE EQUATION*: $y - y_1 = m(x - x_1)$, where the point is (x_1, y_1) and slope is m.

15. WRITE THE *POINT-SLOPE EQUATION* FOR A LINE THAT HAS SLOPE m = 54 AND PASSES THROUGH THE POINT (2, 3). Do not graph !

16. GRAPH: $y - 4 = \frac{3}{2}(x - 1)$. **HINT: START THE GRAPH AT THE POINT GIVEN BY** (x_1, y_1) **IN THE *POINT-SLOPE EQUATION. THEN MOVE ALONG THE LINE USING THE RISE/RUN FROM THE IDENTIFIED SLOPE.***

17. DETERMINE WHETHER THE ORDERED PAIR IS A SOLUTION OF THE SYSTEM OF EQUATIONS.

(1,4); $10x - 4y = -6$

$14x - 6y = -10$

SOLVE THE NEXT PROBLEMS USING THE SUBSTITUTION METHOD

18.

$x + y = 5$

$y = x + 1$

19.

$x = y - 6$

$6x + 4y = 4$

SOLVE THE NEXT PROBLEMS USING THE ELIMINATION METHOD

20.

$x - y = 6$

$x + y = 4$

21.

$x - y = 3$

$2x - 3y = -1$

SOLVE USING THE SUBSTITUTION OR ELIMINATION METHOD:

22. JODY'S EXPERIMENT REQUIRES HER TO MIX AN 80 % ACID SOLUTION WITH A 50 % ACID SOLUTION TO CREATE 200 -oz. OF A 68 % ACID SOLUTION. HOW MUCH 80 % SOLUTION (called x) AND HOW MUCH 50 % ACID SOLUTION (called y) SHOULD SHE USE? IN OTHER WORDS, SOLVE FOR x AND y.

23. y varies *directly* as x. Which of the following equations applies to this problem ? Choose the correct equation from the 2 choices given below and write it down on your paper.
(i) $y = kx$
(ii) $y = k/x$

24. Find k in the following problem: y varies directly as x and y = 55 when x = 11.
FOLLOW UP: FIND Y WHEN X = 3.

25. y varies *inversely* as x. Which of the following equations applies to this problem ? Choose the correct equation from the 2 choices given below and write it down on your paper.
(i) $y = kx$
(ii) $y = k/x$

26. Find k in the following problem: y varies inversely as x and y = 2 when x = 6.
FOLLOW UP: FIND Y WHEN X = 2.

EXTRA CREDIT:

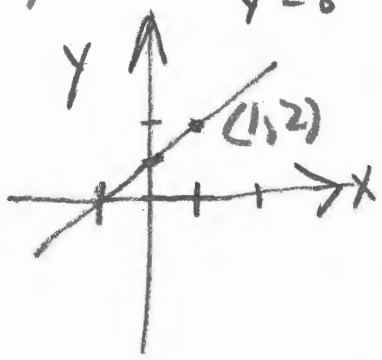
27. GRAPH: $y + 4 = \frac{3}{2}(x + 1)$. HINT: START THE GRAPH AT THE OINT GIVEN BY (x_1, y_1) IN THE *POINT-SLOPE EQUATION. THEN MOVE ALONG THE LINE USING THE RISE/RUN FROM THE IDENTIFIED SLOPE.*

28. JODY SELLS TEA. SHE WANTS TO MIX A 50 % GREEN TEA-BLEND WITH AN 80 % GREEN TEA-BLEND TO CREATE 200 -LBS OF A 65 % GREEN TEA-BLEND. HOW MUCH 80 % GREEN TEA-BLEND AND HOW MUCH 50 % GREEN TEA-BLEND SHOULD SHE USE TO CREATE HER VERY SPECIAL 65 % BLEND? HINT : SOLVE FOR X AND Y.

1. yes $(0,8) \rightarrow y = 0 + 8$, $y = 8$

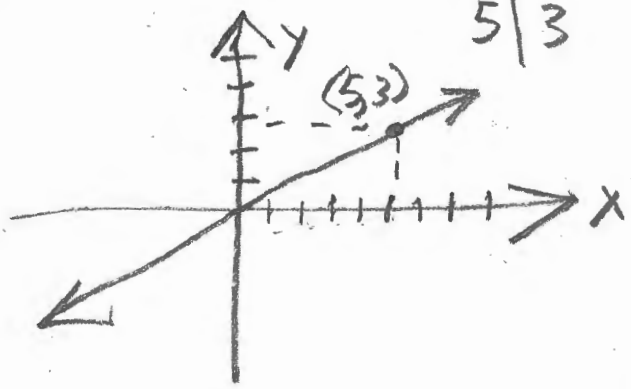
2.

x	y
0	1
1	2



3. $y = \frac{3}{5}x$

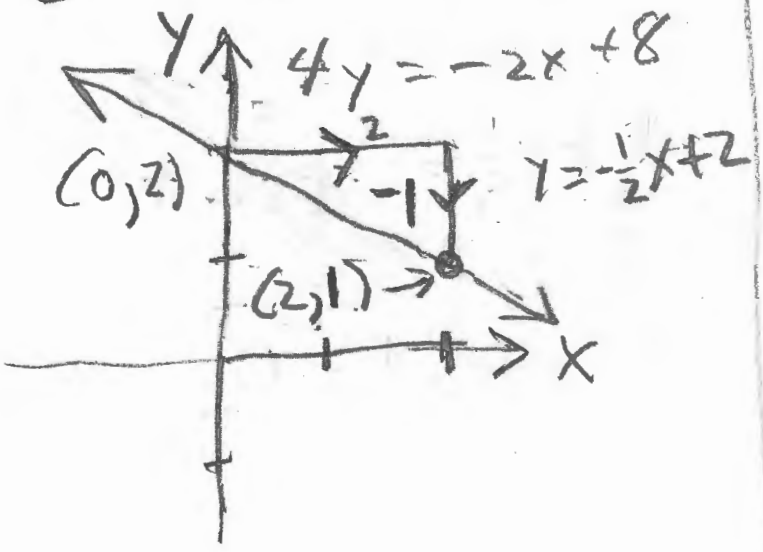
x	y
0	0
5	3



4. $2x + 4y = 8$

$4y = -2x + 8$

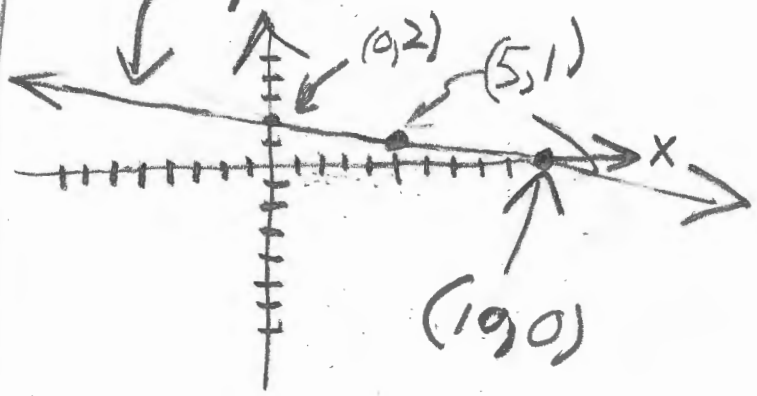
$y = -\frac{1}{2}x + 2$



5. $x + 5y = 10$

$5y = -x + 10$

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



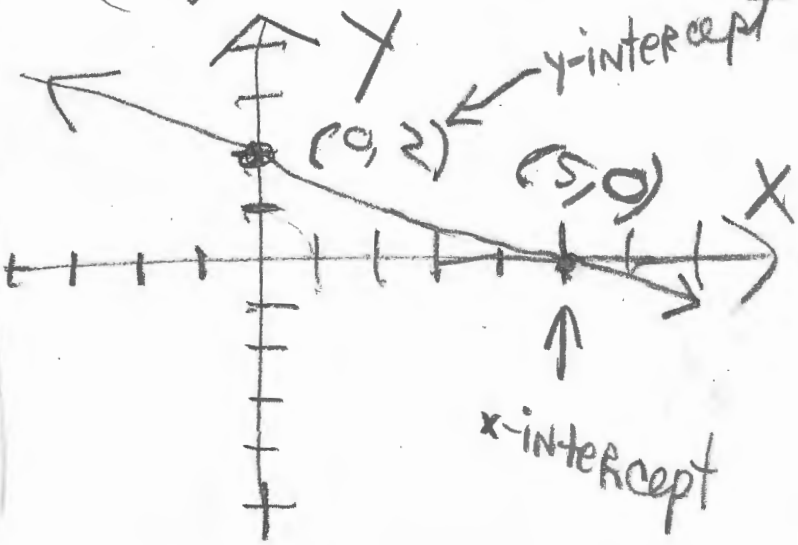
6. $2x + 5y = 10$

$x = 0 \Rightarrow 5y = 10$

$(0,2)$ $y = 2$

$y = 0 \Rightarrow 2x = 10$

$(5,0)$ $x = 5$



7.

TIME = 4h

PAGES = 10

Money = $200

$\frac{200}{4} = 50 \frac{\$}{h}$

$\frac{200}{10} = 20 \frac{\$}{P}$

$\frac{10P}{4h} = 2.5 \frac{P}{h}$

8.

$(6,12)$

$-(2,8)$

$4, 4 \Rightarrow 1 = \frac{1}{1}$

9.

$(6,8)$

$(2,8)$

$4, 0 \Rightarrow 0$

10.

$(2,12)$

$-(2,8)$

$0, 4$

undefined

11.

$(6,4)$

$-(0,8)$

$6, -4$

$\Rightarrow -\frac{4}{6} = -\frac{2}{3}$

RVn = 3

Rise = -2

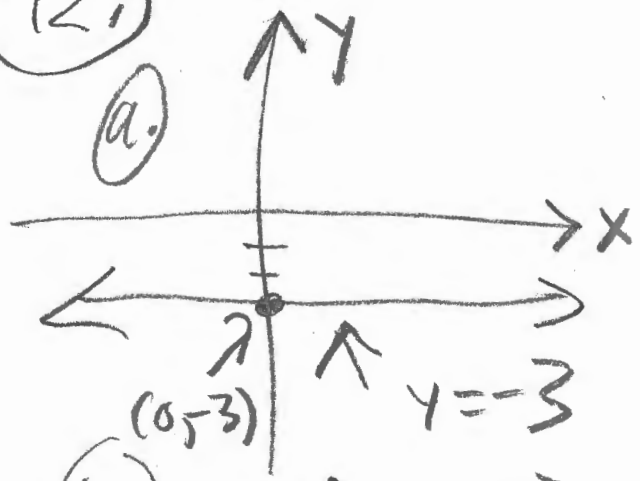
$= \frac{-2}{3}$

$= \frac{\text{Rise}}{\text{RVN}}$

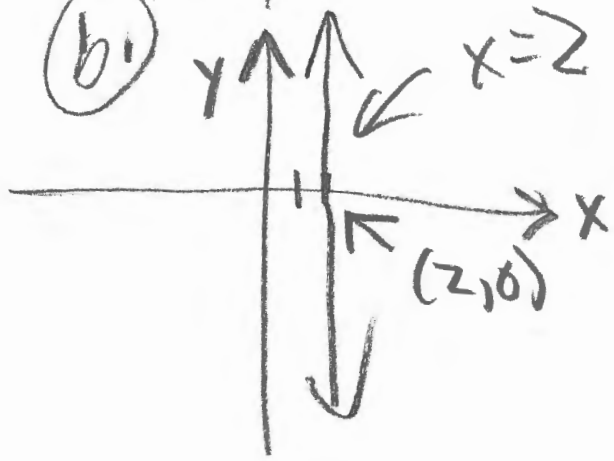
Test 2 Sol'n

(12.)

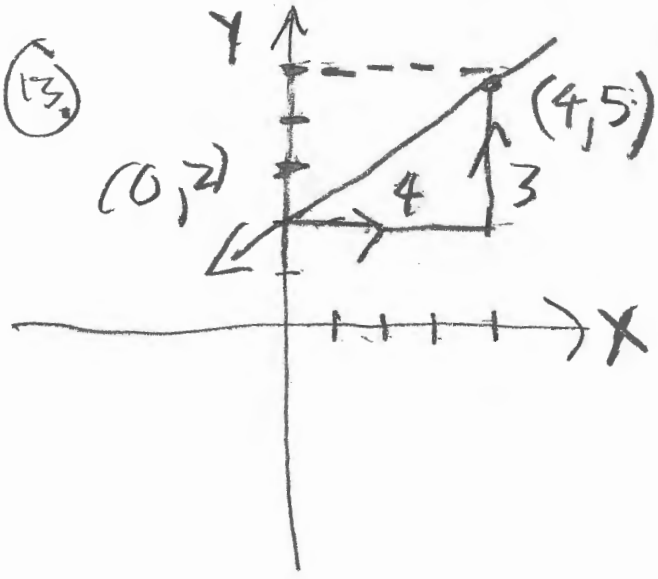
a.



b.



(13.)

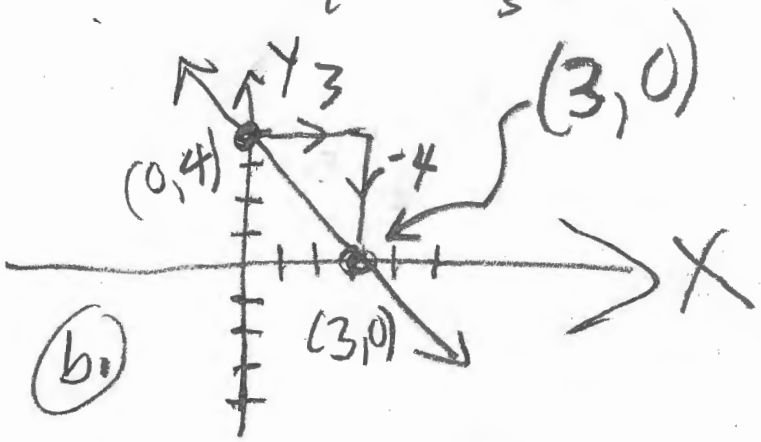


(14.)

a. $4x+3y=12$

$3y=-4x+12$

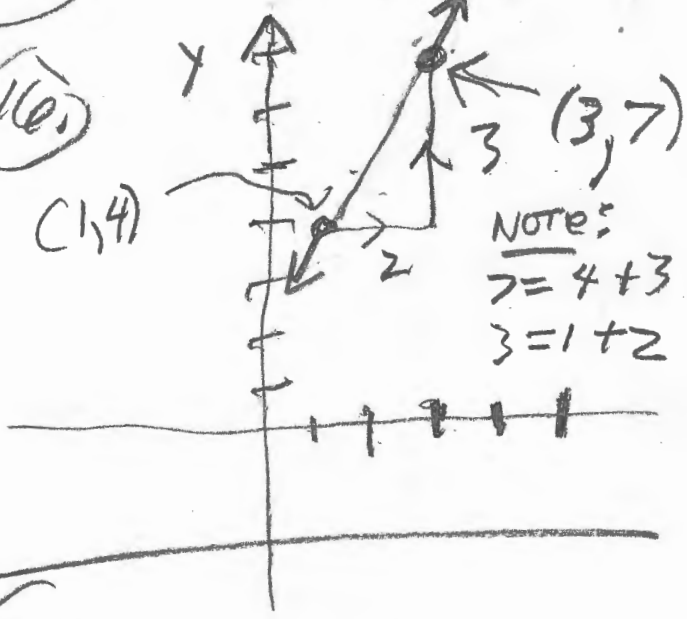
$y=-\frac{4}{3}x+4$



b.

(15.) $y-3=54\cdot(x-2)$

(16.)



(17.) $10x-4y=-6$

$14x-6y=-10$

$(1,4)$: $10\cdot1-4\cdot4=-6$

$14\cdot1-6\cdot4=-10$

GL2.

4 test 2 Su 19

(18.)

$x+y=5$

$y=x+1$

$x+x+1=5$

$2x+1=5$

$2x=4$

$x=2$

$y=3$ } $(2,3)$

(19.)

$x=y-6$

$6x+4y=4$

$6\cdot(y-6)+4y=4$

$6y-36+4y=4$

$10y=40$

$y=4$

$x=4-6=-2$

$\Rightarrow (-2,4)$.

(20.)

$x-y=6$

$x+y=4$

$2x=10$

$x=5$

$5-y=6$

$-y=1$

$y=-1$

$(5,-1)$

(21.)

$2(x-y=3)$

$2x-3y=-1$

$2x-2y=6$

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

$y=7$

$x-y=3$

$x-7=3$

$x=10$ } $(10,7)$

(4

Test 3 Sulq

22. $x + y = 200$

$0.80x + 0.50y = 136$

$x = 136 - y$

$0.80(200 - y) + 0.5y = 136$

$160 - 0.8y + 0.5y = 136$

$-0.3y = -36$

$y = 120$

$x = 80$

23. (i) $y = k \cdot x$

24. $55 = k \cdot 11$

$5 = k$

$y = 5 \cdot 3 = 15$

25. (ii) $y = \frac{k}{x}$

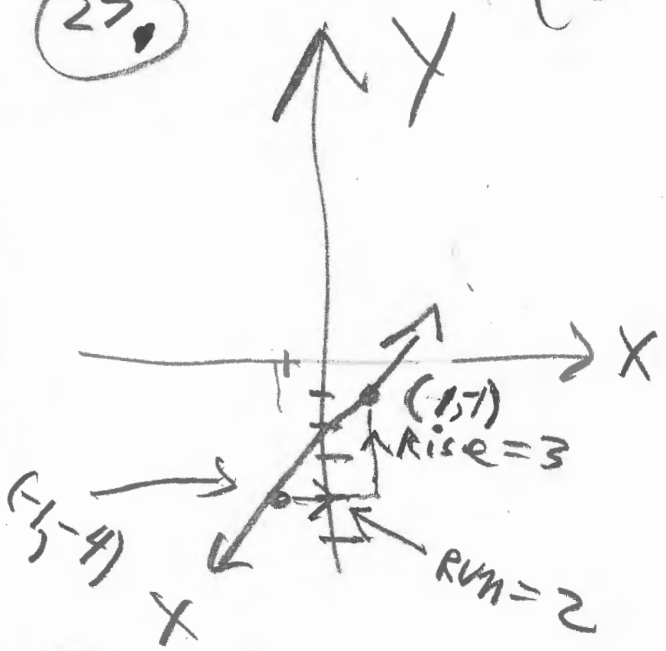
26. $2 = \frac{k}{6}$

$k = 12$

$\rightarrow y = \frac{12}{2} = 6$

E.C:

27. (5)



28. Note: $\begin{cases} -1 = -4 + 3 \\ 1 = -1 + 2 \end{cases}$

$x + y = 200$

$0.50x + 0.80y = 130$

$x = 200 - y$

$0.50(200 - y) + 0.8y = 130$

$100 - 0.5y + 0.8y = 130$

$0.3y = 30$

$y = 100$

$x = 100$.

NOT a SURPRISE SINCE 65% is at MIDPOINT of 0's & 1's.