Name: _____ blk/hr: _____ Date: _____ ID: A

Math 8 - Unit 6 Pre-Test

_____/ 48 points _____%

1 (1 point) Solve by graphing.

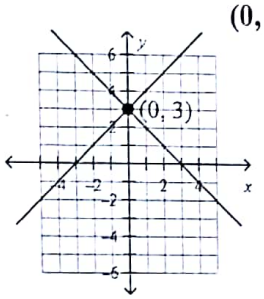
$y = x + 3$

$y - 3 = x$

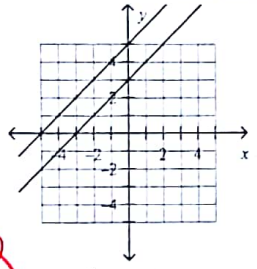
$+3 \quad +3$

$y = x + 3$ (same)

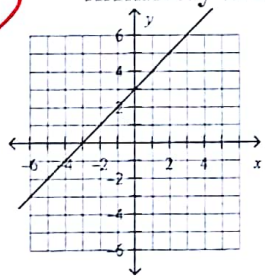
A (0, 3)



B no solutions

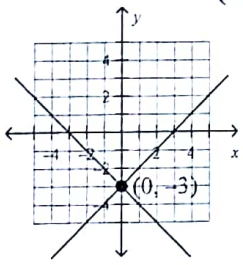


C infinitely many solutions



one line

D (0, –3)



2 (1 point) What is the solution of the system? **Use substitution.**

$y = 2x + 10$

$y = 4x$

$y = 4(5)$

$y = 20$

$4x = 2x + 10$

$\frac{2x}{2} = \frac{10}{2}$

$x = 5$

A (–5, –20)
B (20, 5)
C (5, 20)
D (1.7, 6.7)

3 (1 point) Solve by using **substitution**.

$2x + y = -1$

$y = x + 5$

$2x + x + 5 = -1$

$3x + 5 = -1$

$-5 \quad -5$

$3x = -6$

$x = -2$

$y = -2 + 5$

$y = 3$

A (–3, 2)
B (–2, 3)
C (3, –2)
D $(-\frac{3}{2}, 2)$

4 (1 point) Solve the system of equations. Use **elimination**.

$3x + 5y = -16$

$+ \quad 5x - 5y = 40$

$8x = 24$

$x = 3$

$5(3) - 5y = 40$

$15 - 5y = 40$

$-15 \quad -15$

$-5y = 25$

$y = -5$

A (5, 5)
B (4, –5.6)
C (–5, 3)
D (3, –5)

5 (1 point) Find the solution using **elimination**.

$3x - y = 4$

$+ \quad -3x + y = 4$

$0 + 0 = 8$

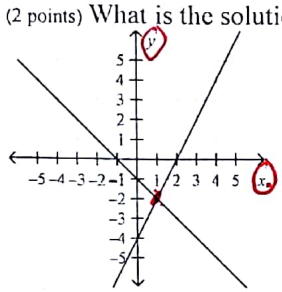
$0 = 8$

A Inf. Many Sol.
B (0, 4)
C (0, 0)
D No solution

C
C
B
D
D

Look @ #1

6 (2 points) What is the solution of the system?



Solution: 1, -2

(x, y)

7 (2 points) What does the graph look like of a system of equations that has **infinitely many solutions**?

Looks like 1 line

8 (2 points) Without graphing, is (4, –5) a solution of the system? **Must show your work for both equations.**

yes

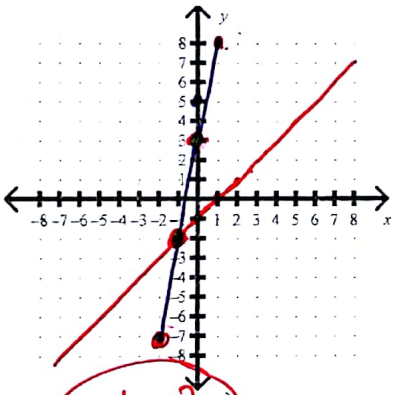
$y = \frac{1}{4}x - 6$ $\quad -5 = \frac{1}{4}(4) - 6 \quad -5 = -5$ ✓

$-x + y = -9$ $\quad -4 + -5 = -9 \quad -9 = -9$ ✓

9 (7 points) Solve by **graphing only**. Must graph both equations. Write the solution as an ordered pair or write "no solution" or "infinitely many solutions." Remember, you can check your answer.

A) $y = 5x + 3$ (3 points)

$y = x - 1$

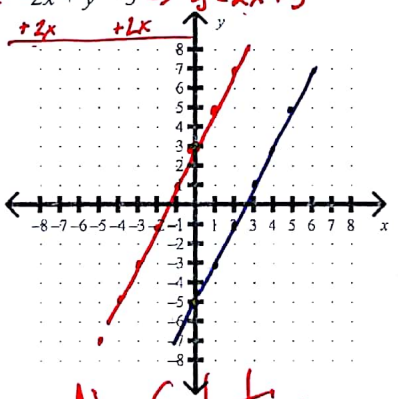


Solution: -1, -2

B) $y = 2x - 5$ (4 points)

$-2x + y = 3 \rightarrow y = 2x + 3$

+2x +2x



Solution: No Solution

10 (8 points) Find the solutions to the systems using **substitution only**. **MUST SHOW WORK.** Write the solution as an ordered pair or write "no solution" or "infinitely many solutions." Remember, you can check your answer.

(4 points each)

A) $y = 2x - 8$

$3x + y = -3$

$3x + 2x - 8 = -3$

$5x - 8 = -3$

$+8 \quad +8$

$5x = 5$

$x = 1$

$y = 2(1) - 8$

$y = 2 - 8$

$y = -6$

1, -6

B) $y = -3x + 2$

$6x + 2y = 4$

$6x + 2(-3x + 2) = 4$

$6x + -6x + 4 = 4$

$4 = 4$

IMS.

11 (8 points) Find the solutions to the systems using **elimination only. MUST SHOW WORK.** Remember, you can check your answer. (4 points each)

A) $3x + y = 8$
$+\ -3x + 3y = -12$
$4y = -4$
$y = -1$
$3x + -1 = 8$
$3x = 9$
$x = 3$
$3, -1$

B) $-x + 2y = +10$ → create opposites → $6 + 2y = -10$
$+\ 3x + 2y = 2$
$2x = 12$
$x = 6$
$2y = -16$
$y = -8$
$6, -8$

12 (2 points) Two numbers have a sum of 56 and a difference of 10. What are the two numbers?

$x + y = 56$
$+\ x - y = 10$
$2x = 66$
$x = 33$
$33 + y = 56$
$-33 \quad -33$
$y = 23$

13 (2 points) You have ones and fives in your pocket. 7 bills total, worth $19. How many fives and ones do you have?

x = \$1 bills, y = \$5 bills
$-(x + y = 7)$ bills
$1x + 5y = 19$
$4y = 12$
$y = 3$
$x + 3 = 7$
$x = 4$
4 \$1 bills
3 \$5 bills

14 (6 points) **COMPARE** -Kelly's Dog Kennel charges $31 for a vaccination shot plus $12 per night to board a dog. Ober's Doggy Overnight charges $45 for a vaccination but only $10 per night. Find how many nights until the companies charge the same amount

A) Define variable	B) Write equation	C) Solve	D) Your neighbor is going on vacation and needs to board their dog. Use your answer to **give specific advice to the family** as to which company they should use to board their dog.
x = nights	KDK: $31 + 12x$ = ODO: $45 + 10x$	$31 + 2x = 45$ $-31 \quad -31$ $2x = 14$ $x = 7$ nights	Less than 7 go to KDK More than 7 go to ODO
(1 point)	(2 points)	(1 point)	(2 points)

15 (4 points) **BREAK EVEN** - Perry's Pizza Parlor has to pay $440 a day to run their shop. It costs $6 to make a pizza and they sell them for $8 each. How many pizzas must they sell to break even?

A) Define variable	B) Write equation for expense & income.	C) Solve
x = pizzas	$440 + 6x = 8x$ cost income	$\frac{440}{2} = \frac{2x}{2}$ 220 pizzas $= x$
(1 point)	(2 points)	(1 point)