Name Key
8A; Algebra 1

Date _____
Period _____

Homework #63b

1) Are there any ordered pairs that satisfy both the equations $2x + y = 7$ and $2x = 5 - y$? Explain.

No, B/C they have the same slope and different y-intercepts, they are parallel and therefore have no solution points (Inconsistent)

$-2x \quad -2x$

$y = -2x + 7$

$m = -2$

$B = 7$

$+y \quad +y$

$y + 2x = 5$

$-2x \quad -2x$

$y = -2x + 5$

$m = -2$

$B = 5$

2) Are there any ordered pairs that satisfy the equation $y - x = 4$, but **do not** satisfy the equation $\frac{2y}{2} = \frac{8}{2} + \frac{2x}{2}$? Explain your answer.

$y = 4 + 1x$

$y = x + 4$

$m = 1$

$B = 4$

$+x \quad +x$

$y = x + 4$

$m = 1$

$B = 4$

NO, B/C they have the same slope + y-intercepts, they are the same exact equations therefore they have an infinite amount of solutions that satisfy BOTH equations at the same time (Dependent)

3) Without graphing, determine the type of system that is given and the number of solutions it has

a) $y = 2x + 5$
$y = 2x - 1$

Same slope, diff y-int means they are parallel and have NO solutions

- Inconsistent
- NO solutions

b) $y = -x - 1$
$y = -1 - x$
$y = -x - 1$

Same slope, same y-int means they are the same equations and have an infinite # of solutions

- Dependent
- infinitely many

c) $y = 2x + 5$
$y = -2x + 5$

different slopes mean they have one solution.

(0, 5)

- Consistent
- 1 solution (0, 5)

4) Solve each system by graphing.

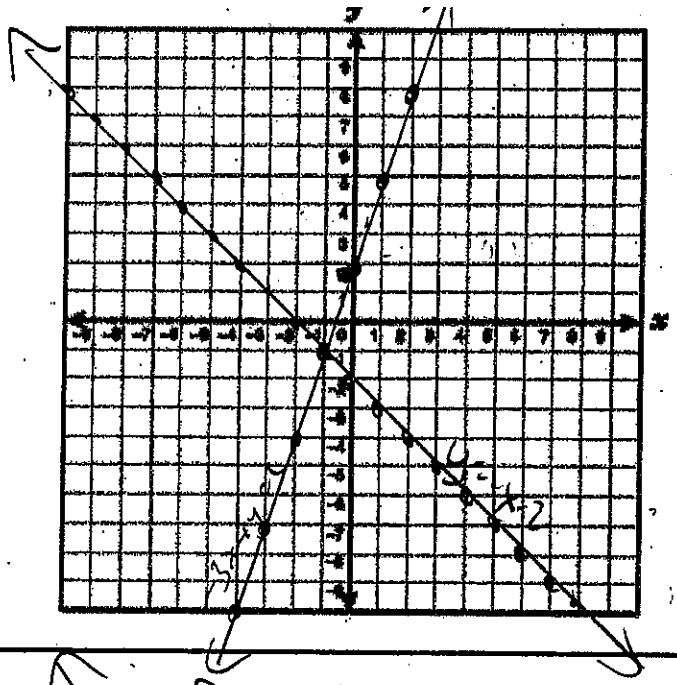
a) $-3x + y = 2$
$y = -x - 2$

Consistent

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

$y = 3x + 2$
$m = \frac{3}{1}$ ↑ →
$B = 2$

$y = -x - 2$
$m = -\frac{1}{1}$ ↓ →
$B = -2$



Solution: $(-1, -1)$

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b) $2y + 3x = 6$
$4y + 6x = -12$

Inconsistent

$2y + 3x = 6$
$-3x \quad -3x$

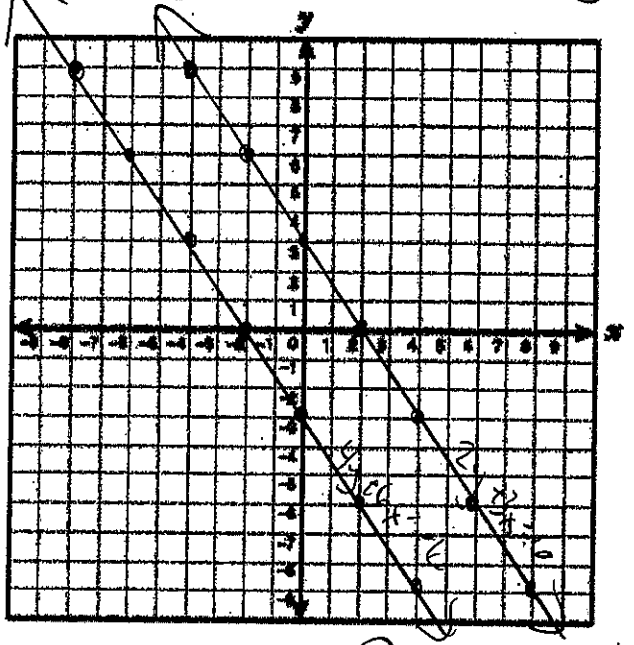
$\frac{2y}{2} = \frac{-3x}{2} + \frac{6}{2}$

$y = -\frac{3}{2}x + 3$
$m = -\frac{3}{2}$ ↓ →
$B = 3$

$4y + 6x = -12$
$-6x \quad -6x$

$\frac{4y}{4} = \frac{-6x}{4} - \frac{12}{4}$

$y = -\frac{3}{2}x - 3$
$y = -\frac{3}{2}$ ↓ →
$B = -3$



Solution: No solutions

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c) $2x - y = -7$
$y = 2x + 7$

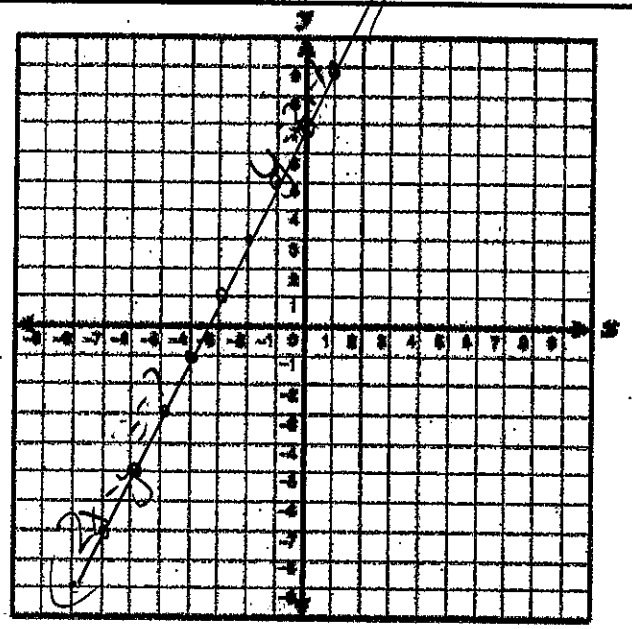
Dependent

$2x - y = -7$
$-2x \quad -2x$

$\frac{-y}{-1} = \frac{-2x}{-1} - \frac{7}{-1}$

$y = 2x + 7$
$m = \frac{2}{1}$ ↑ →
$B = 7$

$y = 2x + 7$
$m = \frac{2}{1}$ ↑ →
$B = 7$



Solution: Infinitely many