Worksheet Chapter 4   Name _____
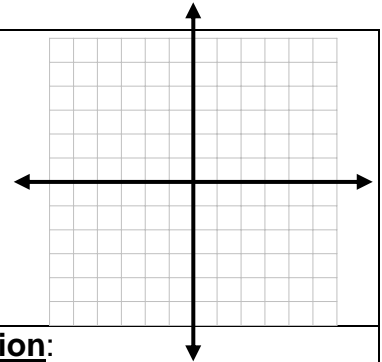
Direction: Write neatly; show your work in an organized fashion.

1. Solve the system by graphing:
    y = -2x + 5
    4x – y = 1

2. Solve by **Substitution**:
    x + 2y = 6
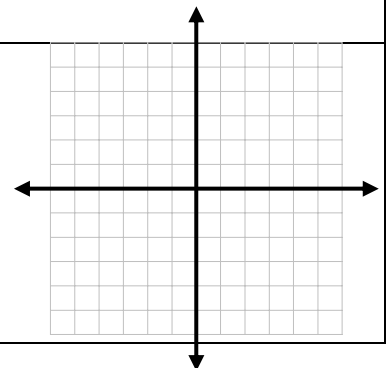   2x + y = 8

3. Solve by **Elimination**:
    2x + 3y = 8
    5x + 2y = -2

4. The perimeter of a rectangle is 96 cm. The length is 27 cm more than the width.
    Find the length and the width.

5. Graph the inequality:
    x – 2y > 2

1. Solve the system by graphing:

y = -2x + 5	(0, 5)	y = 4x − 1
4x − y = 1	m = -2/1 = rise / run	(0, -1)
-4x -4x		m = 4/1 = rise / run
-y = -4x + 1		
so y = 4x − 1		
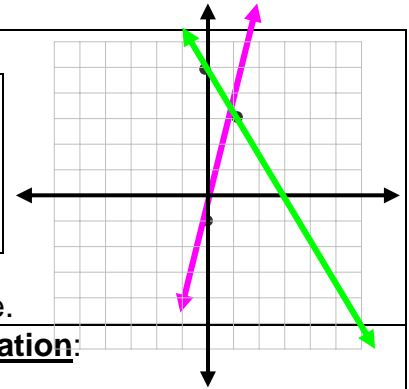
The solution is (1, 3); the one point that solves both green and purple.

2. Solve by **Substitution**:

$x + 2y = 6$
$2x + y = 8$
$-2x   -2x$ Equation #2
$y = -2x + 8$

Solution is
(10/3, 4/3)

$x + 2y = 6$ Equation #1
$x + 2(-2x + 8) = 6$
$x + -4x + 16 = 6$
$-3x + 16 = 6$
$ -16   -16$
$-3x = -10$ so x = 10/3
$-3   -3$

Plug x answer into either equation. (I'll do #1).
$x + 2y = 6$ goes to $(10/3) + 2y = 6$; [mult. by 3]
$10 + 6y = 18$ $6y = 8$ $y = 8/6 = 4/3$
$-10   -10$ $3   3$

3. Solve by **Elimination**:

$2x + 3y = 8$
$5x + 2y = -2$
$(2)(2x + 3y) = 8(2)$ $4x + 6y = 16$
$(-3)(5x + 2y) = -2(-3)$ $-15x − 6y =   6$
                                $-11x   = 22$
                                 so x = -2

Plug in x = -2 into either equation (I'll do #2).
$5(-2) + 2y = -2$
$-10 + 2y = -2$
$+10   +10$
      $2y = 8$
so y = 4

The solution is (-2, 4)

4. The perimeter of a rectangle is 96 cm. The length is 27 cm more than the width.
Find the length and the width.

Set L = length   The solution is W = 10.5 cm
Set W = width   and L = 37.5 cm
Perimeter = 96
$96 = 2L + 2w$ $96 = 2(W + 27) + 2w$, so $96 = 2W + 54 + 2W$, so $96 = 4W + 54$
$L = W + 27$ $-54   -54$
                                               $42 = 4W$
            So L = 37.5   L = 10.5 + 27 ←   so W = 10.5 cm

5. Graph the inequality:
   $x − 2y > 2$

Step #1
Graph $x − 2y = 2$
with a dashed line

X	Y
0	-1
2	0
4	1

Step #2
Test (0,0) and shade
$0 − 2(0) > 2$
0 > 2 false, shade below