Graphs of Linear Inequalities in Two Variables

Total points = 53

Graph each inequality.

1. $2x - y > 3$

$2x - y = 3$ ✓
$2x - 2x - y = 3 - 2x$ ✓
$-1[-y = 3 - 2x]$ ✓
$y = 2x - 3$ ✓
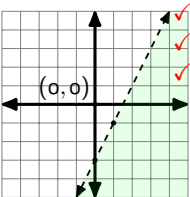$m = 2$ ✓
$b = -3$ ✓

Let $x = 0$ and $y = 0$: ✓
$2x - y > 3$ ✓
$2(0) - 0 > 3$ ✓
$0 - 0 > 3$ ✓
$0 > 3$ ✓

2. $2x - 2y \geq -8$

$2x - 2y = -8$ ✓
$2x - 2x - 2y = -8 - 2x$ ✓
$\dfrac{-2y}{-2} = \dfrac{-8}{-2} - \dfrac{2x}{-2}$ ✓
$y = x + 4$ ✓
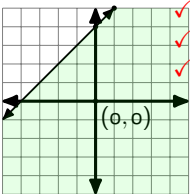$m = 1$ ✓
$b = 4$ ✓

Let $x = 0$ and $y = 0$: ✓
$2x - 2y \geq -8$ ✓
$2(0) - 2(0) \geq -8$ ✓
$0 - 0 \geq -8$ ✓
$0 \geq -8$ ✓

3. $-3x + y < -2$

$-3x + y = -2$ ✓
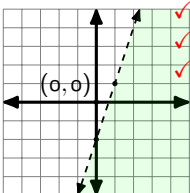$-3x + 3x + y = -2 + 3x$ ✓
$y = 3x - 2$ ✓
$m = 3$ ✓
$b = -2$ ✓

Let $x = 0$ and $y = 0$: ✓
$-3x + y < -2$ ✓
$-3(0) + 0 < -2$ ✓
$0 + 0 < -2$ ✓
$0 < -2$ ✓

4. $x + y \leq -3$

$x + y = -3$ ✓
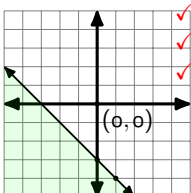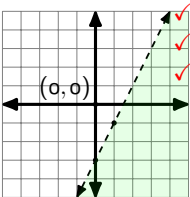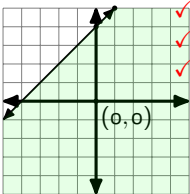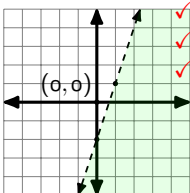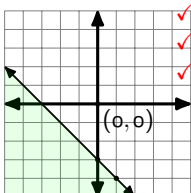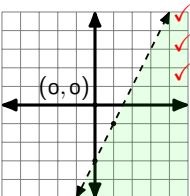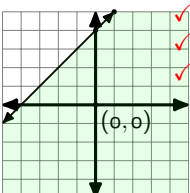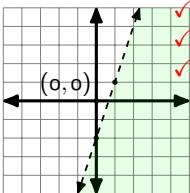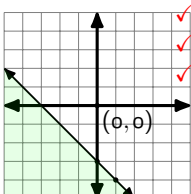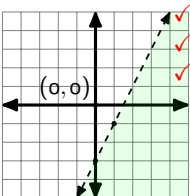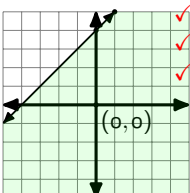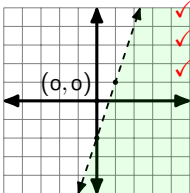$x - x + y = -3 - x$ ✓
$y = -x - 3$ ✓
$m = -1$ ✓
$b = -3$ ✓

Let $x = 0$ and $y = 0$: ✓
$x + y \leq -3$ ✓
$0 + 0 \leq -3$ ✓
$0 \leq -3$ ✓