## EXAMPLE 2  Graph a system with no solution
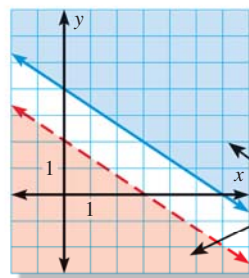
**Graph the system of inequalities.**

$2x + 3y < 6$ **Inequality 1**

$y \geq -\dfrac{2}{3}x + 4$ **Inequality 2**

**Solution**

**STEP 1** **Graph** each inequality in the system. Use **red** for $2x + 3y < 6$ and **blue** for $y \geq -\dfrac{2}{3}x + 4$.



The red and blue regions do not intersect.

**STEP 2** **Identify** the region that is common to both graphs. There is no region shaded both red and blue. So, the system has no solution.

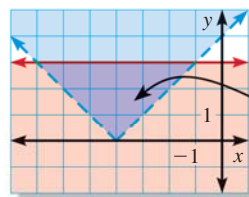## EXAMPLE 3  Graph a system with an absolute value inequality

**Graph the system of inequalities.**

$y \leq 3$ **Inequality 1**
$y > |x + 4|$ **Inequality 2**

**REVIEW ABSOLUTE VALUE**
For help with graphing absolute value inequalities, see p. 132.

**Solution**

**STEP 1** **Graph** each inequality in the system. Use **red** for $y \leq 3$ and **blue** for $y > |x + 4|$.



The graph of the system is the intersection of the red and blue regions.

**STEP 2** **Identify** the region that is common to both graphs. It is the region that is shaded **purple**.

✓ **GUIDED PRACTICE**  for Examples 1, 2, and 3

**Graph the system of inequalities.**

**1.** $y \leq 3x - 2$
    $y > -x + 4$

**2.** $2x - \dfrac{1}{2}y \geq 4$
    $4x - y \leq 5$

**3.** $x + y > -3$
    $-6x + y < 1$

**4.** $y \leq 4$
    $y \geq |x - 5|$

**5.** $y > -2$
    $y \leq -|x + 2|$

**6.** $y \geq 2|x + 1|$
    $y < x + 1$