

§13.5 Graphing Inequalities in 2 Variables

① $x + 3y > 6$

$$3y > -x + 6$$

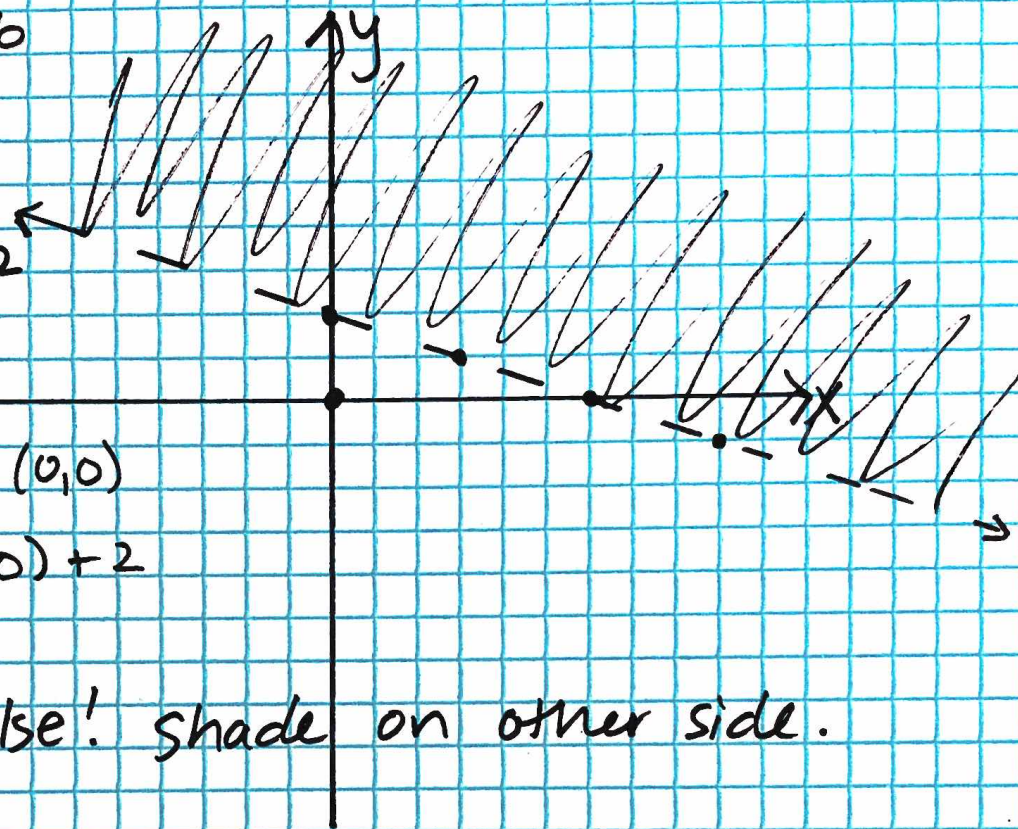
$$y > -\frac{1}{3}x + 2$$

test point (0,0)

$$0 > -\frac{1}{3}(0) + 2$$

$$0 > 2$$

~~False~~ False! shade on other side.



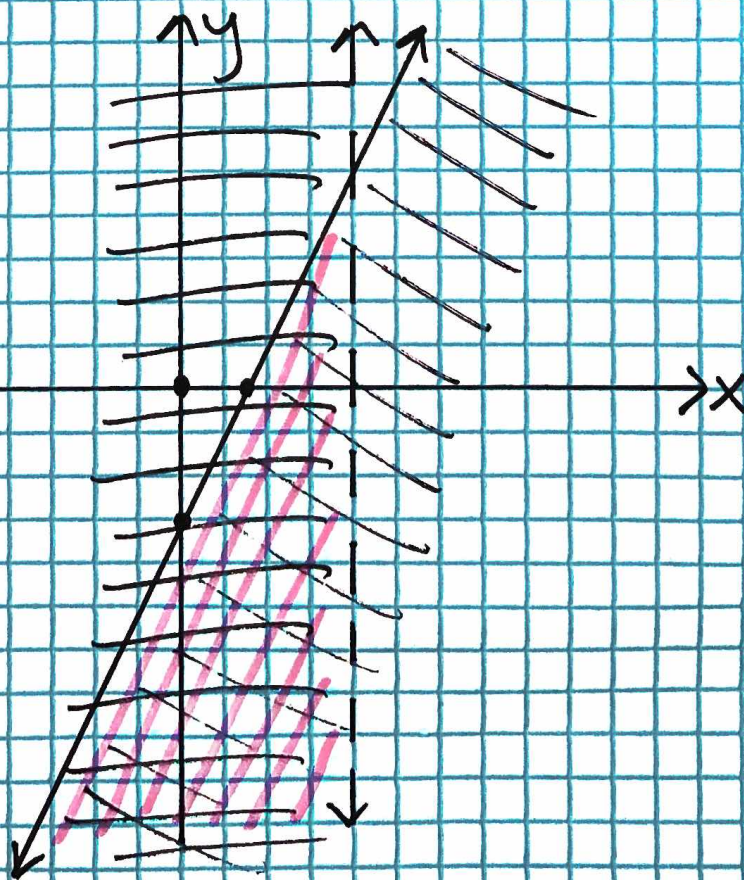
② $\begin{cases} 4x - 2y \geq 6 \\ x < 4 \end{cases}$

test point (0,0)

$$0 - 0 \geq 6$$

$$0 \geq 6 \text{ No!}$$

$$0 < 4 \text{ yes!}$$



§13.6 Simplifying Radical Expressions.

$$\sqrt{\quad} \quad \sqrt[3]{\quad} \quad \cancel{4\sqrt[4]{\quad}} \quad 4\sqrt{\quad}$$

$$\sqrt[3]{27} = 3$$

$$\sqrt[4]{16} = 2$$

$$\sqrt[3]{3^3}$$

$$\sqrt[4]{2^4}$$

index radical

$$\sqrt[n]{\textcircled{X}}$$

radicand

$$\begin{aligned} \textcircled{1} \sqrt{50} &= \sqrt{25 \cdot 2} \\ &= \sqrt{5^2 \cdot 2} \\ &= 5\sqrt{2} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \sqrt{a^4 \cdot b^6} \\ &= \sqrt{(a^2)^2 (b^3)^2} \\ &= a^2 b^3 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \sqrt{16a^2b^2c^4} \\ &= 4abc^2 \end{aligned}$$

$$\begin{aligned} \textcircled{4} \sqrt{80x^7} \\ &= \sqrt{16 \cdot 5 \cdot x^6 \cdot x} \\ &= 4x^3\sqrt{5x} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \sqrt[3]{125x^9y^{10}} \\ &= 5x^3y^3\sqrt[3]{y} \end{aligned}$$

$$\begin{aligned} \textcircled{6} \sqrt[4]{x^{15}y^{16}} \\ &= x^3y^4\sqrt[4]{x^3} \end{aligned}$$