Chapter 2 -4 Parallel and Perpendicular Lines

take note

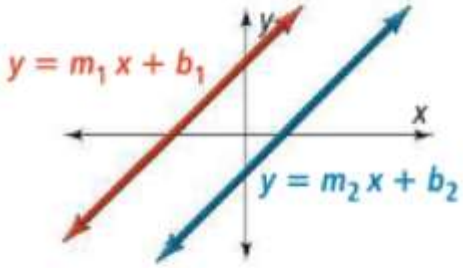
Concept Summary Writing Equations of Lines

Slope-Intercept Form	Point-Slope Form	Standard Form
$y = mx + b$	$y - y_1 = m(x - x_1)$	$Ax + By = C$
Use this form when you know the slope and the y-intercept.	Use this form when you know the slope and a point, or when you know two points.	A, B, and C are real numbers. A and B cannot both be zero.

take note

Key Concepts Parallel and Perpendicular Lines

The slopes of **parallel lines** are equal.

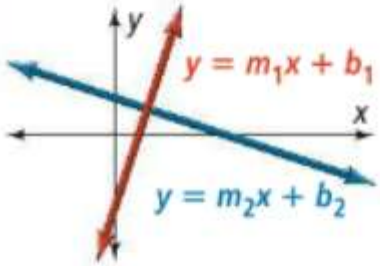


$m_1 = m_2$

$b_1 \neq b_2$

No line can be vertical.

The slopes of **perpendicular lines** are negative reciprocals of each other.



$m_1 \cdot m_2 = -1$

$m_1 = -\frac{1}{m_2}$

$m_2 = -\frac{1}{m_1}$

m_1 and m_2 are negative reciprocals of each other.

What is the equation of each line in slope-intercept form?

a) **The line parallel to y = 5x – 4 through (-2,1)**

b) **The line perpendicular to y = -2x + ¾ with the same y-intercept as x + 3y = 12.**