5.2 Use Linear Equations in Slope-Intercept Form

Key Vocabulary
- **y-intercept,** *p. 225*
- **slope,** *p. 235*
- **slope-intercept form,** *p. 244*

KEY CONCEPT
For Your Notebook

Writing an Equation of a Line in Slope-Intercept Form

STEP 1 **Identify** the slope m. You can use the slope formula to calculate the slope if you know two points on the line.

STEP 2 **Find** the y-intercept. You can substitute the slope and the coordinates of a point (x, y) on the line in $y = mx + b$. Then solve for b.

STEP 3 **Write** an equation using $y = mx + b$.

Skill #6: Write an equation of the line given a slope and a point on the line.

EXAMPLE 1 **Write an equation given the slope and a point**

Write an equation of the line that passes through the point $(-1, 3)$ and has a slope of -4.

Your Turn !

You Try: Skill #6

Write an equation of the line that passes through the point $(6, 3)$ and has a slope of 2.

Don't forget to show your work and write down your answer !

Skill #7: Write an equation of the line given two points on a line.

EXAMPLE 2 **Write an equation given two points**

Write an equation of the line that passes through $(-2, 5)$ and $(2, -1)$.

Your Turn !

You Try: Skill #7

Write an equation of the line that passes through $(1, -2)$ and $(-5, 4)$

Don't forget to show your work and write down your answer !

Skill #8: Write an equation of the line given two points on a line in function notation.

EXAMPLE 3 **Standardized Test Practice**

Which function has the values $f(4) = 9$ and $f(-4) = -7$?

Ⓐ $f(x) = 2x + 10$ Ⓑ $f(x) = 2x + 1$

Ⓒ $f(x) = 2x - 13$ Ⓓ $f(x) = 2x - 14$

Your Turn !

You Try: Skill #8

Write an equation for the linear function with the values $f(-2) = 10$ and $f(4) = -2$.

Don't forget to show your work and write down your answer !

Skill #9: Model a real - world situation given a constant rate of change and a data point.

Skill #10: Model a real - world situation given two data points.

We will come back to work with word problems !

Please Don't Forget to Enter Your Answers for the "You Try" examples in the form below!