

Warm Up:

Name the slope and y-intercept of the line with each equation.

1. $y = -\frac{2}{3}x + 5$

2. $y = -x$

3. $-y + 3 = 9x$

4. $-2y = -4x + 12$

Key Concept: Creating Equations in Slope-Intercept Form Given the Slope and a Point

Step 1: Determine whether the given point is the _____.

If not, substitute the given values into the

_____ equation to find the y-intercept.

Step 2: Use the given _____ and the _____ you found to write the equation of the line in _____ form.

Example 1: Write an Equation Given the Slope and a Point

Write an equation of the line that passes through the given point and has the given slope.

a) (4, 5), slope: -2

c) (7, 5), slope: 3

b) (-8, 6), slope: $-\frac{3}{4}$

d) $(-4, \frac{1}{4})$, slope: $\frac{11}{16}$

Example 2: Write an Equation in Slope-Intercept Form

- a)** Marissa is baking a recipe that calls for her to turn down the temperature on her oven for part of the baking time. Write an equation to represent the situation if the temperature in her oven drops 25°F every 30 seconds, and after 2 minutes the temperature is 350°F .
- b)** The total cost of Javier's cable bill increases by \$4.99 per movie he purchases. Write an equation to represent the situation, if after watching 3 movies in a month Javier's cable bill is \$93.97.
- c)** The total monthly cost of Ayzha's gym membership increases by \$5 per class she attends. After attending 4 classes one month, her total cost is \$49.99. Write an equation that represents Ayzha's total monthly cost y after attending x classes.

Key Concept: Creating Equations in Slope-Intercept Form Given Two Points

Step 1: Use the given points to find the _____ of the line containing the points.

Step 2: Use the _____ from Step 1 and either of the given points to find the _____ of the line.

Step 3: Use the _____ from Step 1 and the _____ from Step 2 to write the _____ of the line in slope-intercept form.

Example 3: Write an Equation Given Two Points

Write an equation of the line that passes through the given pair of points.

a) $(-3, 8)$ and $(4, -6)$

c) $(-5, 4)$ and $(-2, 6)$

Example 4: Write an Equation Given Real-World Data

The number of students enrolled in public high schools in the United States has risen slightly since 2010. Write an equation that could be used to predict the number of students enrolled in public high schools if enrollment continues to grow at the same rate.

Year	Students (in thousands)
2011	14,749
2012	14,753
2013	14,754
2014	14,826
2015	14,912