

Name: \_\_\_\_\_

Hour: \_\_\_\_\_

**Topic 1: Writing Equations for Perpendicular Lines (Using Slope-Intercept Form)**

Write an equation in **SLOPE-INTERCEPT** form using the given information.

<p>1. A line that passes through <math>(7, -2)</math> and is perpendicular to the line described by <math>y = -7x + 5</math></p> <p><math>y = mx + b</math></p> <p><math>-2 = \frac{1}{7}(7) + b</math></p> <p><math>-2 = 1 + b</math></p> <p><math>-1 - 1 = b</math></p> <p><math>-2 = b</math></p> <p><math>y = -\frac{1}{7}x - 3</math></p>	<p>2. A line that passes through <math>(3, -4)</math> and is perpendicular to the line described by <math>y = 3x + 6</math></p> <p><math>-4 = -\frac{1}{3}(3) + b</math></p> <p><math>-4 = -1 + b</math></p> <p><math>+1 - 1 = b</math></p> <p><math>-3 = b</math></p> <p><math>y = -\frac{1}{3}x - 3</math></p>
<p>3. A line that passes through <math>(-5, 6)</math> and is perpendicular to the line described by <math>y = 5x + 4</math></p> <p><math>6 = -\frac{1}{5}(-5) + b</math></p> <p><math>6 = 1 + b</math></p> <p><math>-1 - 1 = b</math></p> <p><math>5 = b</math></p> <p><math>y = -\frac{1}{5}x + 5</math></p>	<p>4. A line that passes through <math>(-7, -5)</math> and is perpendicular to the line described by <math>y = -\frac{7}{8}x - 5</math></p> <p><math>-5 = \frac{8}{7}(-7) + b</math></p> <p><math>-5 = -8 + b</math></p> <p><math>+8 + 8 = b</math></p> <p><math>3 = b</math></p> <p><math>y = \frac{8}{7}x + 3</math></p>

**Topic 2: Writing Equations for Perpendicular Lines (Using Point-Slope Form)**

Write an equation in **POINT-SLOPE** form using the given information.

<p>5. A line that passes through <math>(4, 5)</math> and is perpendicular to the line described by <math>y = \frac{1}{3}x + 4</math></p> <p><math>y - 5 = -3(x - 4)</math></p>	<p>6. A line that passes through <math>(2, -7)</math> and is perpendicular to the line described by <math>y = \frac{2}{5}x - 3</math></p> <p><math>y + 7 = -\frac{5}{2}(x - 2)</math></p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

7. A line that passes through (9, 11) and is perpendicular to the line described by

$$y = -x - 7$$

$$y - 11 = 1(x - 9)$$

8. A line that passes through (3, 1) and is perpendicular to the line described by

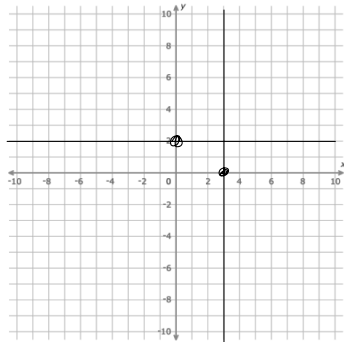
$$y = \frac{1}{4}x - 8$$

$$y - 1 = -4(x - 3)$$

**Topic 3: Writing Equations for Perpendicular Lines with Zero and Undefined Slopes**

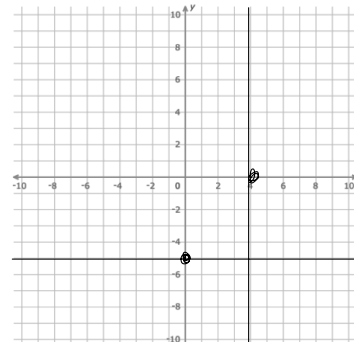
Write an equation using the given information. Feel free to graph the original equation for a better visualization of your new equation.

9. A line that passes through (3, -1) and is perpendicular to the line described by  $y = 2$



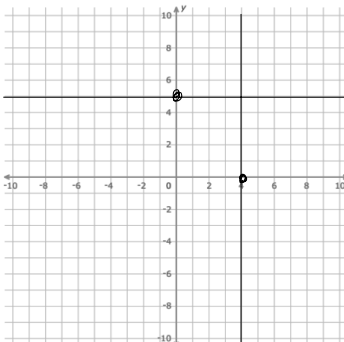
$$x = 3$$

10. A line that passes through (4, -6) and is perpendicular to the line described by  $y = -5$



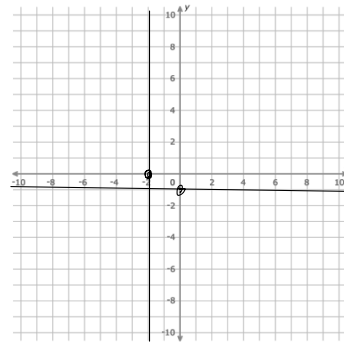
$$x = 4$$

11. A line that passes through (-3, 5) and is perpendicular to the line described by  $x = 4$



$$y = 5$$

12. A line that passes through (2, -1) and is perpendicular to the line described by  $x = -2$



$$y = -1$$