Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Table#:\_\_\_\_\_\_\_\_Period:\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_

**4.6A Writing A Linear Equation Using Slope-Intercept Form\_Classwork**

*Objective: write equations of lines in slope-intercept form. CC.SS.8.F.4*

*HW: 4.6A pg 182\_#5-15 ALL*

Writing an equation given TWO POINTS (using SLOPE INTERCEPT FORM):

1. Use slope formula to find the slope: $\frac{Y\_{2}-Y\_{1}}{X\_{2}-X\_{1}}$. REDUCE FRACTION

2. Substitute in the slope (m) and pick a point (x, y).

3. Solve for the y-intercept (b) using slope intercept form: y = mx + b

4. Substitute only the slope (m) and the y-intercept (b) into slope-intercept form

**EXAMPLE PROBLEM:** *Find the Slope Intercept Form of the line through (5, 7) and (3, 1).*

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| #1: FIND SLOPE | #2: FIND Y-INTERCEPT | #3: WRITE EQUATION |
| (5, 7) and (3, 1). |   and (5, 7) y = mx + b7 = (3)(5) + b-8 = b | y = mx + by = 3x – 8Keep x and y as variables.  |

***EXAMPLE PROBLEM:*** *Write an equation of a line in slope-intercept form given a point (4, 2) and a slope of 3*

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| **What do you know?** | **Substitute and Solve** | **Write Equation** |
| y = 2x = 4m = 3b = ?? |  y = mx + b2 = (3)(4) + b2 = 12 + b-10 = b | y = mx + by = 3x – 10 Keep x and y as variables.  |

Write an equation of a line in slope-intercept form given the slope and a point.

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| **EXAMPLE 1.** $$\left(-3,7\right) and (0,2)$$Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **EXAMPLE 2.** $$\left(10,0\right) and m=\frac{1}{2}$$Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Write a linear equation for each table.

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| **EXAMPLE 3:** Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | **EXAMPLE 4:** Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

***YOU TRY:*** *Write an equation of a line in slope-intercept form given the slope and a point.*

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| 1. $\left(4, 2\right) and (-1, 2)$

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. $\left(2, 8\right) and slope=\frac{1}{2}$

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. $slope=-2 and (-1, 3)$

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. $\left(-1, 3\right) and (1, 5)$

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |