**Writing Linear Equations: Translating Between Recursive and Explicit Formulas**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slope Intercept Form:

NOW NEXT:

Examples:

1. Write a NOW NEXT rule for each equation that models how the dependent variable changes as the independent variable increases by one.
	1. $y=2x+3$
	2. $y=-4x+5$
2. Write an equation in slope intercept form.
	1. NEXT = NOW + 5, starting at -3
	2. NEXT = NOW -3, starting at 2
3. Stephanie gets paid $8 an hour for babysitting. Write a recursive rule that relates how much money Stephanie earns from one hour to the next. Write an explicit formula that relates the number of hours that Stephanie works and the amount of money that she is paid.
4. Jacob owes $500 on a 0% interest credit card. He makes payments of $50 per month to lower his credit card balance. Write a recursive rule that relates Jacob’s credit card balance from one month to the next. Write an explicit rule that relates the number of months that Jacob has been making payments to Jacob’s credit card balance.
5. Write a NOW NEXT rule for each equation that models how the dependent variable changes as the independent variable increases by one.
	1. $y=-0.125x-4$
	2. $y=\frac{2}{3}x+0.75$
6. Write an equation in slope intercept form.
	1. NEXT = NOW + 4, starting at 7
	2. NEXT = NOW - 2, starting at -10
7. To rent a moving truck it costs $25 just to rent the truck and then $0.30 per mile. Write a recursive rule that models the increase in cost as the mileage increases. Write an explicit rule that relates the number of miles driven to the cost of the rental.
8. Every time the kicker on the football team kicks a field goal he earns 3 points for his team. Write a recursive rule that models the increase in points each time the kicker kicks a field goal. Assuming that the team only scores points in a game each time the kicker kicks a field goal, write an explicit formula that relates the number of times the kicker successfully kicks a field goal to the points the team has scored.