Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Table #: \_\_\_\_\_\_\_\_Period: \_\_\_\_\_\_Date: \_\_\_\_\_\_

**6.3B Linear Functions\_Classwork**

*Objective: Interpret y = mx + b as defining a linear function. Writing linear functions from tables. CCSS: 8.F.3*

*HW: 6.3B Homework (handout).*

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| **Example:** You are controlling an unmanned aerial vehicle (UAV) for surveillance. The table shows the height y (in thousands of feet) of the UAV x minutes after your start its descent from cruising altitude.       1. Write a linear function that relates y to x. Then graph the linear function. 2. Interpret the slope, y-intercept and x-intercept.   The slope indicates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  The y-intercept indicates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  The x-intercept indicates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. Find the height of the UAV after 36 minutes? |

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| **EXTRA EXAMPLE 3:** The table shows the number *y* of calories your burn in *x* hours of jogging.     |  |  |  | | --- | --- | --- | | 1. Write a linear function that relates y to x. Then, graph the linear function. | 1. On the lines above, interpret the slope and y-intercept. | c. How many calories do you burn in 150 minutes? | |
| **EXTRA EXAMPLE 4:** Your earnings *y* (in dollars) for working *x* hours are represented by the function  y = 6x + 12. The table shows the earnings of your friend.   |  |  |  |  | | --- | --- | --- | --- | | Your earning: **y = 6x +12** | | Your friend’s earning: | | | 1. Graph both functions on the same coordiante plane. | 1. Who has a higher hourly wage? | | 1. Write a function that relates your friend’s earning to the number of hours worked. | |

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| **ON YOUR OWN 4:** Manager A earns $15 per hour and receives a $50 bonus. The graph shows the earnings of Manager B.   |  |  | | --- | --- | |  | 1. Which manager has a higher hourly wage? 2. After how many hours does Manager B earn more money than Manager A? | |
| |  |  | | --- | --- | | **5. MOVIES:** The table shows the cost y (in dollars) of renting x movies.     1. The independent variable is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   The dependent variable is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. Write a linear function that relates y to x. Interpert the slope.   Linear function: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  The slope in the linear function means: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. Graph the linear function 2. How much does it cost to rent 3 movies?   It costs \_\_\_\_\_\_\_\_\_ to rent 3 movies. |  | |