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

**6.3B NOTES – Linear Functions**

*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 1:** 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.

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| 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? |

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| **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. Write a function that relates your friend’s earning to the number of hours worked.
 | 1. Who has a higher hourly wage?
 | 1. Graph both functions on the same coordiante plane.

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| **SIMILAR TEST QUESTION #18**: You are looking into renting a car and are considering 2 car rental companies. Each company charges a flat rental fee and a fee per day. At XYZ Rental, the total cost *y*, in dollars, of renting a car *x* days is represented by the linear function y = 25x + 50. The table shows the total cost for renting a car *x* days from ABC Rental Cars.***ABC Rental Cars*** 1. *Which company has a cheaper fee per day?*
2. *Which company has a cheaper rental fee?*
3. *Which company is cheaper if you want to rent a car for 8 days? HINT: use equations*
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| **SIMILAR TEST QUESTION #17:** A bus travels at a constant speed. The table shows the distance y, in miles that the bus travels after *x* minutes. How far does the bus travel after 14 minutes? (leave your answer as an improper fraction) |