

# 2.2.D3 - LINEAR FUNCTIONS

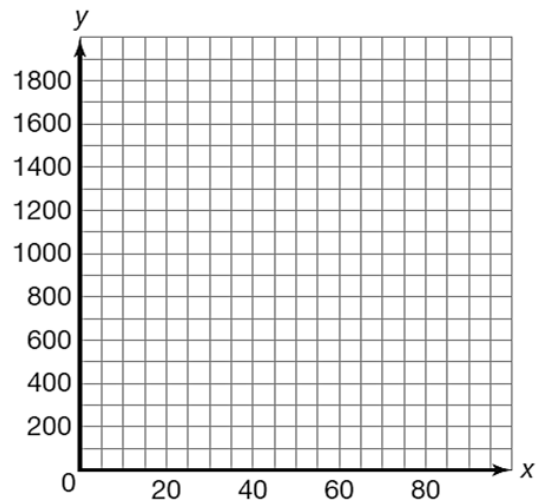
Refer to the 2.2 examples "Identifying & Describing the Parts of a Linear Function" and "Comparing Tables, Equations, and Graphs to Model and Solve Linear Situations" in the Chapter 2 Summary.

**Liz and her friend Tommy are collecting food for the local food bank. Their goal is to collect a total of 1785 pounds of food. They start with 225 pounds donated by a local grocery store. Their goal is to collect 20 pounds of food per day.**

1. Identify the independent and dependent quantities and their units in this situation. Then complete the table.
2. Write a function  $f(t)$  to represent this problem situation.
3. Use the table to estimate the number of days it will take to collect 600 pounds of food.

	INDEPENDENT QUANTITY	DEPENDENT QUANTITY
QUANTITY		
UNITS		
	0	
	10	
	15	
	25	
	48	1185
		1225
		1505
EXPRESSION	$t$	

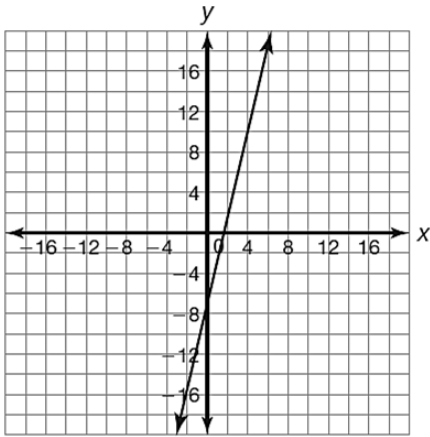
4. Identify the rate of change/slope. What is its contextual meaning?
5. Identify the  $y$ -intercept. What is its contextual meaning?
6. Graph the function representing the problem situation on the coordinate plane. Label the axes.
7. Use the graph to estimate the number of days it will take to collect 600 pounds of food.
8. Algebraically determine the number of days it will take to collect 600 pounds of food.



Problems 9 & 10: Refer to the 2.2 example "Comparing Tables, Equations, and Graphs to Model and Solve Linear Situations" in the Chapter 2 Summary.

Sketch the line for the dependent value to estimate each intersection point.

9.  $f(x) = 4x - 7$  when  $f(x) = 8$



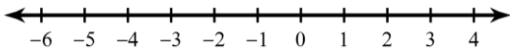
Substitute and solve for  $x$  to determine the exact value of each intersection point.

10.  $f(x) = -200x + 2400$  when  $f(x) = 450$

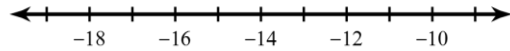
**APK: SOLVING INEQUALITIES**

Solve each inequality and graph the solution set. Refer to the 2.3 example "Writing & Solving Inequalities" in the Chapter 2 Summary.

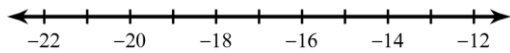
11.  $x - 14 \geq -12$



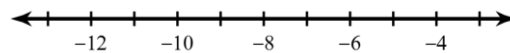
12.  $14r > -182$



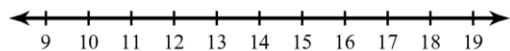
13.  $-17 + m < -33$



14.  $p - 4 \leq -15$



15.  $\frac{x}{18} > \frac{2}{3}$



16.  $\frac{n}{8} \geq -20$

