



LESSON 9.2c
Stretches, Stacks, and Structure

7.EE.2
7.EE.4a

Objective **Structure of Linear Equations**

Warm-Up



Use properties to rewrite.

1. $7(x - 5)$

2. $-13(-2 + 2x)$

3. $7(x - 8)$

4. $9 + 7(3x + 6)$



In the limousine and container scenarios, you represented the situations with two different equations.

1. Complete the table to summarize the different forms of the equations. Use the variables x and y for the independent and dependent variables.

	$y = ax + b$	$y = c + d(x - 1)$
Limousines by Lilly		$y = 99.99 + 23.75(x - 1)$
Transportation with Class		
Round Containers	$y = 0.8x + 8.2$	
Square Containers		

2. Use your equations to explain the meaning of the c and d terms in $y = c + d(x - 1)$.

3. Use your equations to explain the meaning of the a and b terms in $y = ax + b$.

4. Refer back to the graphs of the plastic containers and the related equations. Explain if and how the two equations of the form $y = ax + b$ can be visualized on the graph.

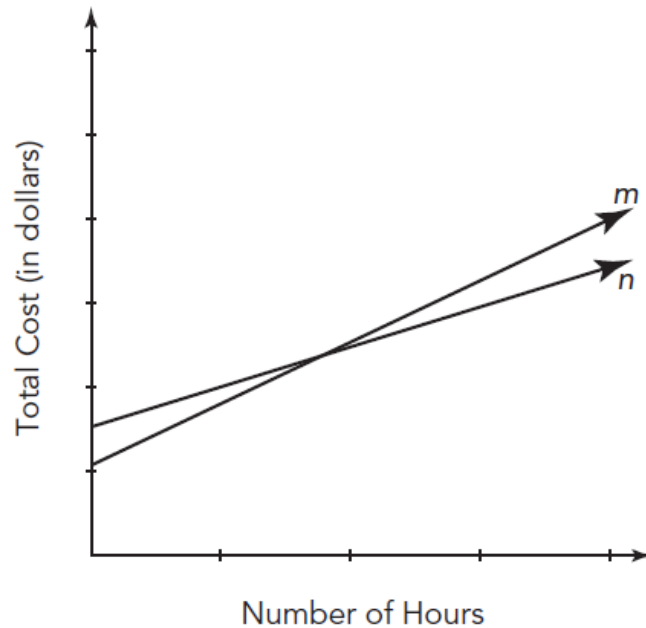
5. Which form of the linear equations do you prefer? Explain your reasoning.

Show You Know

Back to the Limos!

At the beginning of the lesson, you wrote equations for the fee schedule of Limousines by Lilly and Transportation with Class.

1. Determine which graph represents each equation. Use your equations to explain your reasoning.



2. Suppose Katie decides to charge \$124.99 for the first three hours and then \$49.99 for each additional hour. Write an equation to represent Katie's fee schedule.



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Objective

Structure of Linear Equations

Practice

Geoffrey owns the Super Backyard Shed Company. He makes custom built sheds for residential homeowners, and he buys the majority of his building materials from two large home stores in the area. Both stores, Build It and All Things Home, offer reward cards for the purchase of lumber. The more boards that Geoffrey buys at one time, the more points he will earn. The points can then be used for future purchases. The table shows the number of reward points that he will earn.

Number of Boards Purchased	Store	
	Build It	All Things Home
1	10	5
2	12.5	8
3	15	11
4	17.5	14
5	20	17
6		
7		

- Complete the table to show the number of reward points earned for the purchase of 6 and 7 boards. Use the table and scenario to answer each question.
- What are the variable quantities in this problem situation? State which quantity depends on the other.
- Create graphs for each store's reward points in terms of the number of boards purchased. Identify the bounds and intervals. Be sure to label your graph clearly.

