

Math 10 C: Investigating Lines

Complete the following with a partner.

Part A

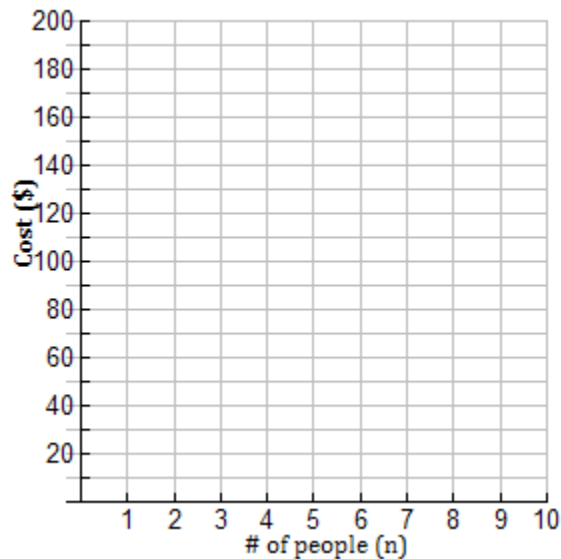
1. The cost of a private dinner with a set menu at a restaurant is represented by the equation $C = 20n$ where n is the number of people in attendance and C is the total cost. Complete the partial table of values below. Then, graph the data on the grid provided. Label the graph L1.

n	C
0	
1	
2	
3	
4	
5	
6	

where n is the number of people in attendance and C is the total cost. Complete the partial table of values below. Then, graph the data on the same grid as number 1. Label the graph L2

n	C
0	
1	
2	
3	
4	
5	
6	

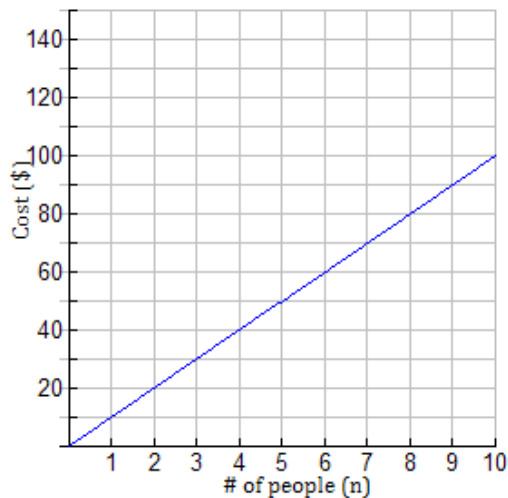
2. The cost of a different menu is represented by the equation $C = 30n$



3. Is the function represented by the equations (and graphs) above linear or non-linear? How do you know?

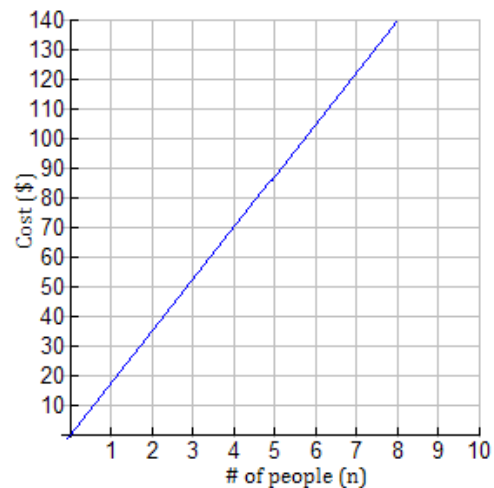
4. How are L1 and L2 different? How are they similar?
5. What would happen to the **graph** if the equation was $C = 15n$?
6. (a) What does the number in front of the independent variable represent in this problem?
- (b) What does the number in front of the independent variable represent in general?

7. Given the graphs below, determine:
 - (a) The cost/person
 - (b) The equation of the line.



(a)

(b)



(a)

(b)

8. How did you find the value in front of the variable in question #7?

9. What if you were told that the cost for 8 people was \$96? What would be the equation of the line?

Part B

1. The cost of a dinner at another restaurant is represented by the equation

$C = 20n + 50$ where n is the number of people in attendance and C is the total cost. Complete the table of values below. Then, graph the data on the grid provided. Label the line L1.

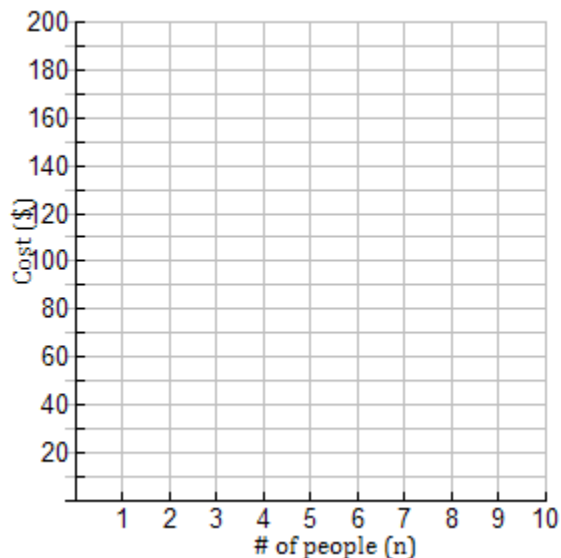
n	C
0	
1	
2	
3	
4	
5	
6	

$C = 20n + 70$ where n is the number of people in attendance and C is the total cost. Create a table of values below.

Then, graph the data on the same grid as number 1. Label the line L2

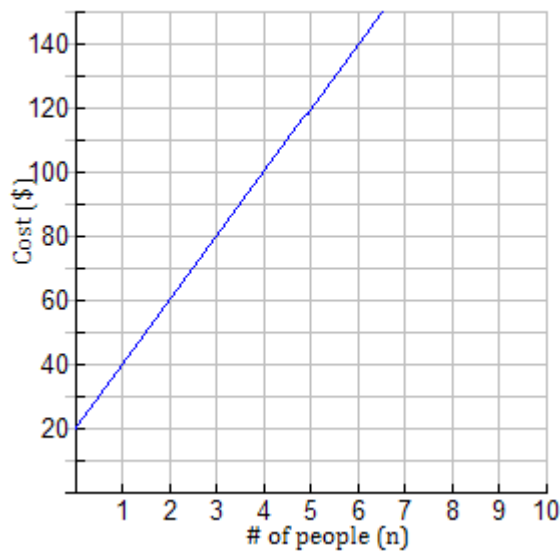
n	C
0	
1	
2	
3	
4	
5	
6	

2. The cost of a different menu at the same restaurant is represented by the equation



3. How are L1 and L2 different? How are they similar?

4. What would happen to the **graph** if the equation was $C = 20n + 30$?
5. What does the constant number (the number NOT multiplied by a variable) in the equation represent?
6. What is the equation of the line shown below? Explain.



7. What if you were told that the fixed cost of renting a room is \$40 and the cost per person is \$15. Write the equation of the line.