

## Table Perimeters: Is there room for me?

### STANDARDS

Content: Round numbers to given place values

Content: Solve problems involving decimal values

Content: Give evidence of work done to solve a problem

Process: Make conclusions from given data

Process: Compare and contrast relationships between elements

### TASK

You have invited some family and friends over for a celebration dinner. 23 people have responded that they can make it. Since you do not have room in your house to seat this many people you decide to rent some table and chairs to set up in your spacious backyard.

You call the rental store and they tell you they have 2.5 ft x 7.5 ft tables. Each chair needs at least 2.5 feet of space along a table. Hmm. You begin to wonder the best way to arrange the tables and chairs... one big row, a large square, each separate... there are many possibilities. You tell the rental place you will get back to them with exactly how many tables and chairs you want.

Determine how many tables are needed if you keep all tables separate. Then draw a different arrangement where tables are pushed together, and determine how many tables would be needed if you chose this arrangement. Compare and contrast the two set-ups

RUBRIC

Criteria	3	2	1	Multiplier
Evidence (work) is shown for calculating total table length needed	Work clearly indicates progression of steps taken to solve problem	Some work is shown, but a step is missing leaving progression difficult to follow	Some work is shown, but more than one step is missing leaving progression unclear	
Calculations for total table length needed are correct	All calculations performed correctly to arrive at right answer	1 error in calculations	More than 1 error in calculations	
Evidence (work) is shown for questions relating to when tables are kept separate	Work clearly indicates progression of steps taken to solve problems	Some work is shown, but 1-2 steps are missing leaving progression difficult to follow	Some work is shown, but more than 2 steps are missing leaving progression unclear	x 2
Calculations needed when tables are kept separate are correct	All calculations performed correctly to arrive at right answer	1 error in calculations	More than 1 error in calculations	
Evidence (work) is shown for questions relating to when tables are pushed together	Work (including diagram) clearly indicates progression of steps taken to solve problems	Some work is shown, but 1-2 steps are missing leaving progression difficult to follow	Some work is shown, but more than 2 steps are missing leaving progression unclear	x 2
Calculations needed for when tables are pushed together are correct	All calculations performed correctly to arrive at right answer	1 error in calculations	More than 1 error in calculations	
Comparison and reasoning for it are logically stated	Statement is accurate and it is easy to follow logic behind reasoning	Statement is accurate but it is difficult to follow complete logic behind reasoning	Statement is inaccurate	x 2

Total \_\_\_\_\_/30

# Table Perimeters



Name \_\_\_\_\_  
6<sup>th</sup> Grade Math

You have invited some family and friends over for a celebration dinner. 23 people have responded that they can make it. Since you do not have room in your house to seat this many people you decide to rent some table and chairs to set up in your spacious backyard.

You call the rental store and they tell you they have 2.5 ft x 7.5 ft rectangular tables. Each chair needs at least 2.5 feet of space along a table. Hmm. You begin to wonder the best way to arrange the tables and chairs... one big row, a large square, each separate... there seem to be many possibilities. You tell the rental place you will get back to them with exactly how many tables and chairs you want.

1. Remembering the man said each chair needs 2.5 feet of space you decide to calculate how much length around the tables is needed for 23 guests plus yourself. Show work here:

## **[If you decide to keep each table separate]**

2. You also remember the man said each rectangular table was 2.5 ft x 7.5 ft. You decide to calculate how much distance there is around each table. Calculate the perimeter of one table. Show work here (it may help to also include a diagram):
  
  
  
  
  
  
  
  
  
  
3. Comparing the total length needed to the length around each table, how many tables do you need to rent? Show work here:
  
  
  
  
  
  
  
  
  
  
4. If you only need to seat 23 people, will there be any extra table space? Give the amount of extra space in terms of length. Show work here:

**[If you decide to push the tables together]**

You recall however that you want to also consider different arrangements. Maybe it would be better to have some tables pushed together rather than all separate. In this case the entire perimeter of each table would not be available. Therefore you decide you must draw out possible arrangements you are thinking of, and label the lengths of each side of the each table to determine the length the arrangement gives you.

5. Draw out one possible arrangement where the tables are pushed together. Make sure the perimeter is large enough to seat 23 people. Clearly label each side length and include work that shows how you arrived at the perimeter of your arrangement:

6. If you only need to seat 23 people, will there be any extra table space? Give the amount of extra space in terms of length. Show work here:

**[Compare and contrast]**

7. Were the same number of tables needed in both cases? \_\_\_\_\_

Explain why you think this was the case. (Consider how much perimeter “disappeared” in your second arrangement by meeting up with another table).