8-4 TASKS

STEP BY STEP

Dan and Suzette collected data about how far they move from a starting point after each step. They both let n represent the number of steps taken and d represent the distance in meters from the start.

Dan's data is in the table to the right.

1. Do you think Dan's steps are big? Explain.

Dan's Step Data				
n	0	1	2	3
d	0	1.1	2.2	3.3

2. Make a graph of Dan's data using the coordinate plane below. Make sure to title the graph and scale both axes appropriately.

3. Write an equation that represents Dan's data.

Suzette found the following linear equation to model her data: $d = 0.5n$.

4. Include a graph of Suzette's equation on the coordinate plane below.

Distance from start (D)

Step number (n)
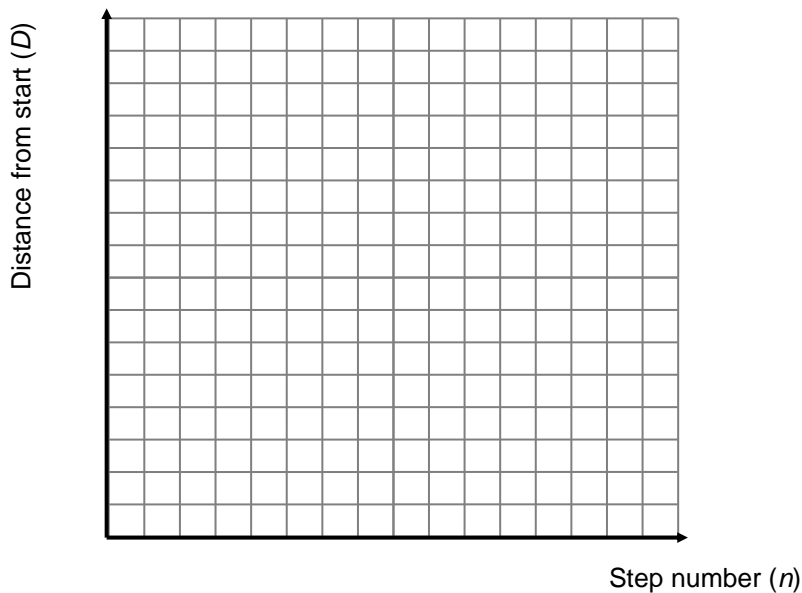
5. Who took bigger steps, Dan or Suzette? Defend your answer using evidence from above.

GROWING SQUARES

This is a pattern of growing squares. All given lengths are in linear units and all given areas are in square units. Each small square in the pattern below is 1 square unit of area.

1. Continue the pattern for step 4.

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Step #	1	2	3	4
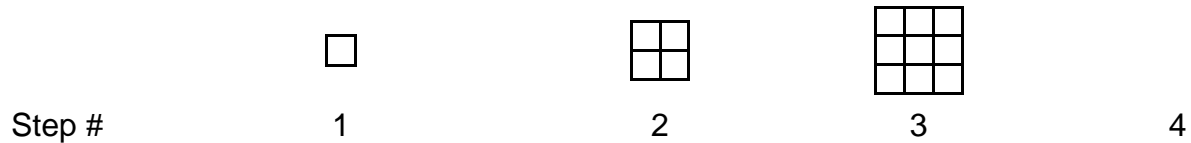
2. Complete each table and write an input-output rule for each (a variable equation).

Table 1	
Step number (n)	Perimeter (P)
0	
1	
2	
3	
4	
5	
n	
Rule: $P =$	

Table 2	
Step number (n)	Area (A)
0	
1	
2	
3	
4	
5	
n	
Rule: $A =$	

3. If the perimeter is 84, find the step number. Show work.

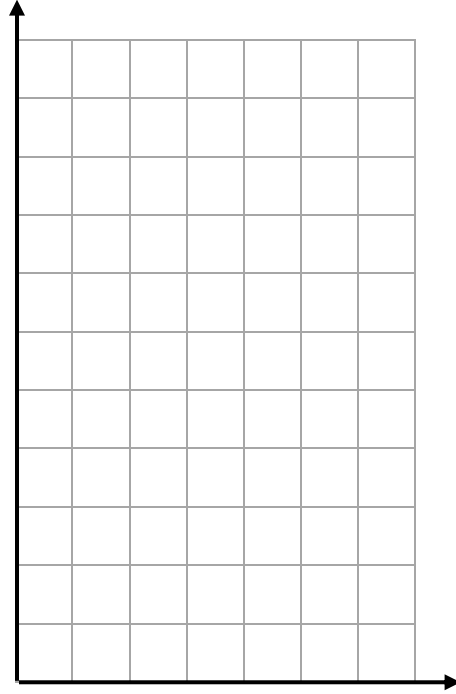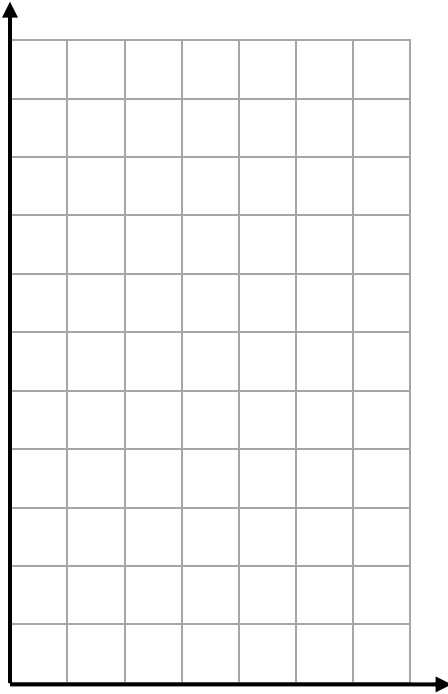4. If the step number is 20, find the area. Show work.

5. Explain how the length of the side of a square is related to its perimeter.

6. Explain how the length of the side of a square is related to its area.

GROWING SQUARES
Continued

7. Create a complete graph for each table on the previous page.

8. Does either graph represent a proportional relationship? Explain.

9. Make at least two comparisons of the graphs.