

RAMP: Decreasing Areas

Name _____

Scenario 1: The area of rectangle ABCD is k square units. A new rectangle is created by removing two square units (one from each end). Find the area of each newly created rectangle in the diagrams below.

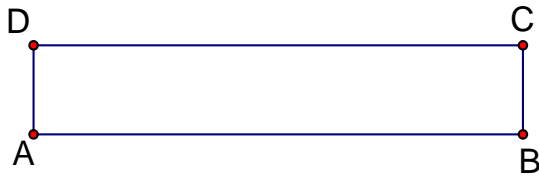


Figure 1

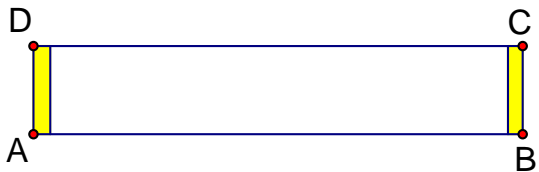


Figure 2

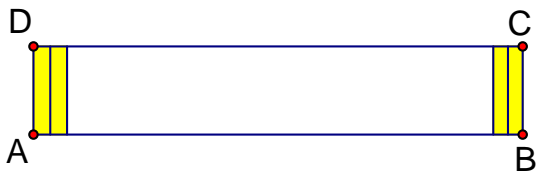


Figure 3

1. Find the area of each new rectangle in terms of k .
2. Given the area of the “nth” rectangle, write formulas to find the “n-1” figure area and the “n+1” figure area.
3. Write an equation that could be used to find the area of any figure in terms of k .

Scenario 2: The area of square ABCD is k . A new square is created by connecting the consecutive midpoints of each side of the square.

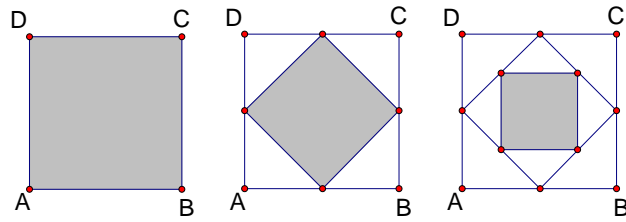


Figure 1

Figure 2

Figure 3

1. Find the area of each new square in terms of k .
2. Given the area of the “ n^{th} ” square, write formulas to find the area of the “ $n-1$ ” figure and the area of the “ $n+1$ ” figure.
3. Write an equation that could be used to find the area of any figure in terms of k .

Using graphs, tables, or rules, compare the way the areas change in each scenario.

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