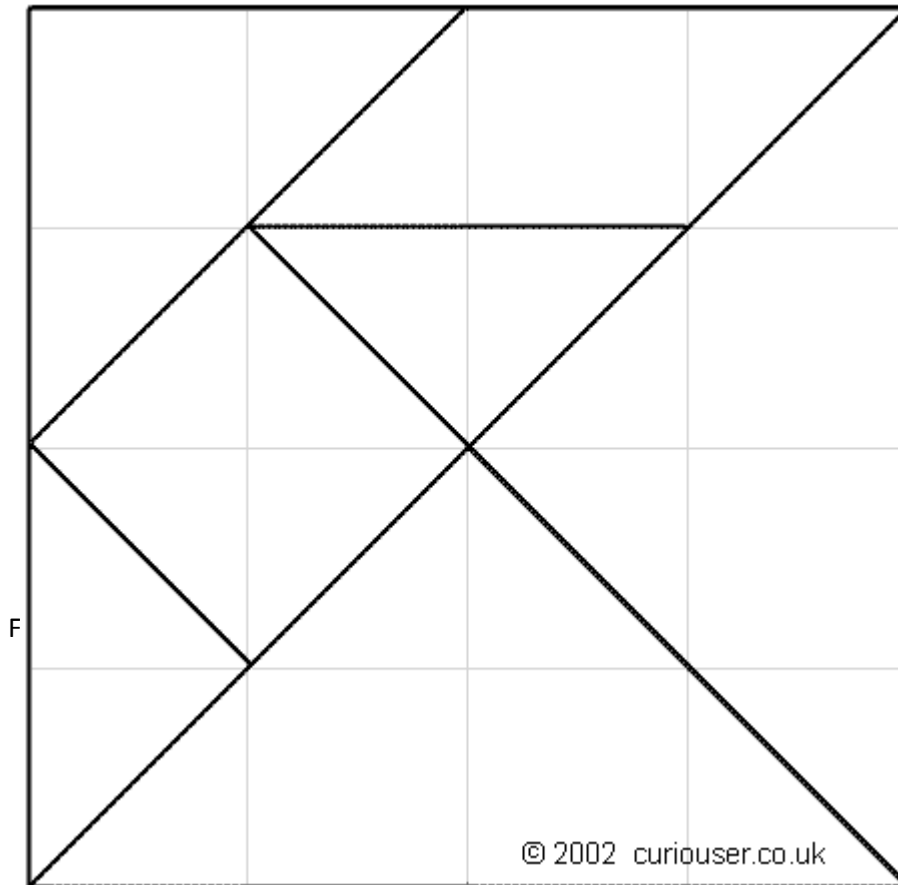


## Tangram Activity

Use the tangram below to answer the questions in Part I.



**PART I** Use the tangram on page 1 to answer questions 1-4.

1. What fractional part of the whole is each piece, A-G?

A)

E)

B)

F)

C)

G)

D)

2. Use proportional reasoning to complete the chart below. For example when the area of piece A is  $3 \text{ cm}^2$ , what are the areas of pieces B – G?

	A	B	C	D	E	F	G
1.	$3 \text{ cm}^2$						
2.		$8 \text{ in}^2$					
3.			$5 \frac{1}{4} \text{ mm}^2$				
4.				$0.7 \text{ km}^2$			
5.					$\frac{1}{3} \text{ ft.}^2$		

3. If the perimeter of the entire figure is 16 cm, and the length of the diagonal of the entire figure is about 5.6 cm, find the perimeter of each piece.

A)

E)

B)

F)

C)

G)

D)

4. If the perimeter of the small square, D, is 2.8 cm, find the perimeter of each piece.

A)

E)

B)

F)

C)

G)

D)

**PART II**      Tangram Composite Figures: Use individual tangram shapes for this activity

1. Put two shapes together to make one figure.

a) Sketch the new figure.

b) Determine the perimeter and area.

2. Put the same two shapes together in a different way.

a) Sketch the new figure.

b) Determine the perimeter and area.

3. Put the same two shapes together in a third way.

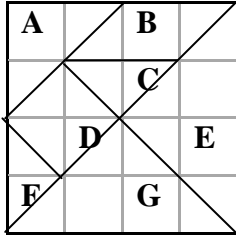
a) Sketch the new figure.

b) Determine the perimeter and area.

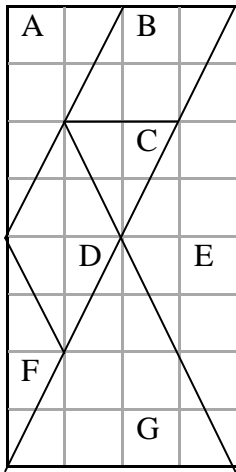
4. Explain any similarities and differences in the measures of the three figures.

**PART III** Change of Dimension

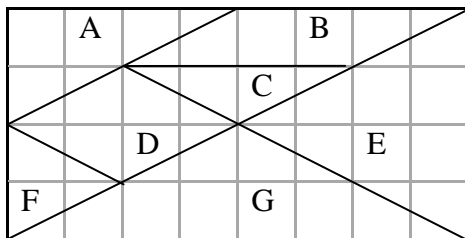
Original Figure: Find the area and perimeter of each piece, A-G. One small square is one square unit, and the length of the entire figure is 4 units.



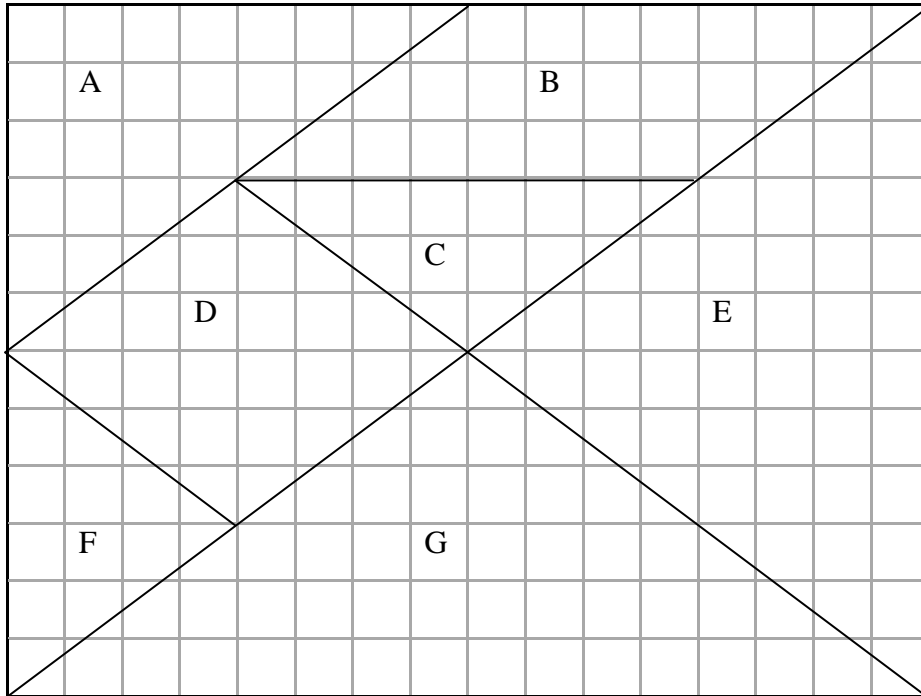
1. Change one dimension by a scale factor of 2. What is the area of each shape, A-G? the perimeter? How are the new measurements different from the original measurements?



2. Change the other dimension by a scale factor of 2. What is the area of each shape, A-G? the perimeter? How are the new measurements different from the original measurements?



3. Change one dimension by a scale factor of 4 and another by a scale factor of 3. What is the area of each shape, A-G? the perimeter? How are the new measurements different from the original measurements?



4. Change one dimension by a scale factor of  $\frac{1}{2}$ . What is the area of each shape, A-G? the perimeter? How are the new measurements different from the original measurements?

