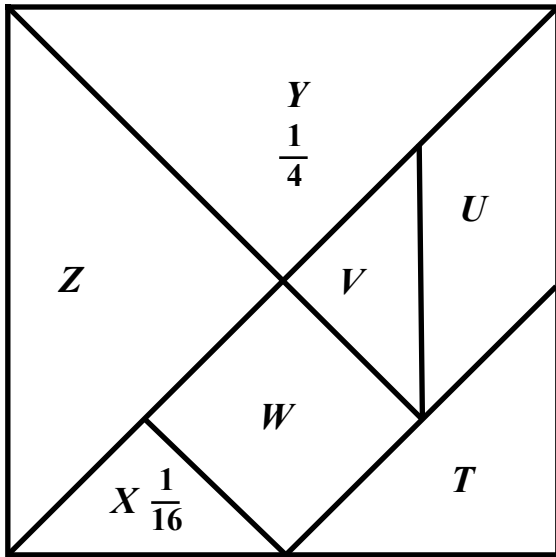


COUNTDOWN Challenge

Tangrams



Tangrams are ancient Chinese puzzles that are both fun and full of math. Each of the 7 pieces in the tangram is called a tan. If the area of the tangram equals 1, what is the area of each tan? (We've provided helpful hints!)

$$Y = \frac{1}{4} \text{ sq. unit} \quad U = \quad \text{sq. unit} \quad V = \quad \text{sq. unit}$$

$$W = \quad \text{sq. unit} \quad X = \frac{1}{16} \text{ sq. unit} \quad Z = \quad \text{sq. unit}$$

$$T = \quad \text{sq. unit}$$

Study the tangram then answer the question sets below.

Geometry Questions

1. Name two sets of congruent triangles. _____
2. Which tans are similar? _____
3. Are all the triangles isosceles right triangles? _____
4. Which quadrilateral is regular? _____
5. Write a ratio expressing the relationship between the quadrilateral tans and all others. _____
6. Write a ratio expressing the relationship between triangle tans and all others. _____

Area Questions

1. Name the smallest pieces. _____
2. Which are the largest tans? _____
3. How many tans are $\frac{2}{16}$ or $\frac{1}{8}$ sq. unit? _____
4. What is the combined area of **T**, **U**, **V**, **W** and **X**? _____
5. What is the combined area of the quadrilaterals? _____
6. What is the area of the isosceles right triangles? _____

Making a Square

Cut the tangram into separate tans so you can move them around to create different squares and complete the table below. (Hint: This is possible for all but 1 number.)

# of tans	names of tans	sketch of square using tans	area
1	W		$\frac{1}{8}$
2			
3			
4			
5			
6			
7			