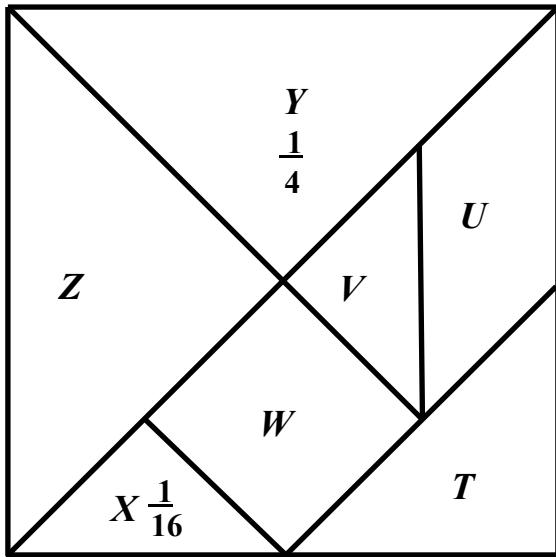


# MathFLIX CHALLENGE

## 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	<b>W</b>		$\frac{1}{8}$
2	<b>X, V</b> or <b>Z, Y</b>		$\frac{1}{8} + \frac{1}{8}$ or $\frac{1}{4} + \frac{1}{4} =$
3	<b>T, X, V</b>		$\frac{1}{8} + \frac{1}{16} + \frac{1}{16} =$
4			
5			
6			
7			