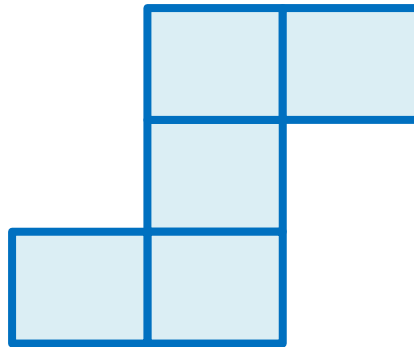


2017-2018 Puzzle Contests Solutions for Contest #4



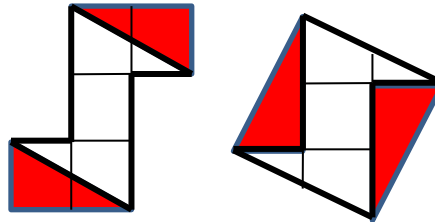
Grades 5up Puzzle Solutions:

1. Cut the shape below into several parts and make a square from them



(25 points)

Answer:



2. In the RSM-MetroWest chess tournament each participant played with every other player, and 5% of the participants had no points at the end of the tournament. What was the number of chess players of that tournament? (In a chess tournament, a win in a game is awarded 1 point, a loss – 0 points, and a draw $\frac{1}{2}$ points) (35 points)

Answer: It was 20 players

Solution: Since just one and only one player of a tournament could have 0 points at the end of the tournament, then the total number of players is $1 \times \frac{100}{5} = 20$

3. Two players play a game named "Who calls the number 100 first". The first player calls any integer from 1 to 9 inclusive. The second adds any integer between 1 and 9 inclusive and calls the sum. Then the first adds any integer between 1 and 9, and calls the new sum again etc. The winner is the one who calls the number 100. What is the winning strategy in this game? Who is a winner in it? **(40 points)**

Answer: The winning strategy is to form a number which is divisible by 10 by a current move. The winner with this strategy is the second player.