A Tribute to Flag Day – June 15, 2020

Problems

Yesterday, Sunday, June 14th, the United States celebrated Flag Day. If you check out the many websites devoted to Flag Day, you are sure to learn a lot about the history of the holiday and the history of the flag, the Pledge of Allegiance and the Star Spangled Banner. Francis Scott Key wrote the Star Spangled Banner in 1814 when he saw the enormous American flag (made by Mary Pickersgill) blowing in the wind approximately 8 miles away. Assuming the flag was visible to anyone within a 15,000-yard radius of the flag, how many square miles was the total area from which the flag could be viewed? Give your answer to the nearest whole square mile.

You’ve probably seen US flags in a variety of different sizes, but they are all geometrically similar and look the same because there are strict guidelines concerning the proportions of the different parts of the flag. A flag has a total of 13 stripes of equal width, starting with red at the top and alternating with white all the way down. There is also a rectangular region in the upper left-hand corner that is blue with white stars. Assuming that a flag is being displayed horizontally, all of the dimensions of the flag are compared to its width (top to bottom) measurement. Assume that the width is 1 unit, the length of the flag (right to left) is 1.9 units, the width of the blue rectangle is 7/13 of a unit (7 of the 13 stripes) and the length of the blue rectangle is .76 units long. Using these proportions, what percent, to the nearest whole number, of the surface area of the flag is red?

On many of the Flag Day websites, there are specific guidelines concerning the displaying of and care of a U.S. flag. Many people put flags out for certain holidays, Flag Day being one of the most popular. Suppose you have 48 little flags each attached to 3-foot stakes and want to place them around the perimeter of your garden in the front yard. Your garden is a perfect square measuring 8 yards by 8 yards and you want to equally space the flags around its perimeter. If you place the first flag in the front, right corner and continue placing them around the entire garden, how many feet apart do you have to place them and how many flags will be along the back side of the garden?

* Check the Problem of the Week Archive next week for solutions to these and previous problems. *