American Flag Day – June 11, 2016

Problems & Solutions

The United States of America celebrates the United States Flag on June 14th. Each year many towns across the United States display US flags on poles along both sides of the length of the main street through town.

Main Street in Typical Town, USA is exactly 1.5 miles long. The local boy scout troop has agreed to place a flag on a pole on each side of the beginning of Main Street and to place flags every 30 feet to the other end of Main Street. How many flags do they need to place flags on both sides of Main Street?

There are 5280 feet in a mile. The length of Main Street is 1.5 × 5280 feet = 7920 feet. 7920 feet ÷ 30 feet/space between flags = 264 spaces. A flag is placed at the beginning of Main Street and the rest of the flags are placed at the end of every space between flags. Therefore, 265 flags are needed for one side of Main Street. Since they are placing the flags on both sides of Main Street, they need 2 × 265 flags = 530 flags.

The official ratio of the Fly(length) to Hoist(width) of the rectangular flag of the United States of America is 1.90 to 1.00 as set by Executive Order 10834. There is a list of eleven permissible specific flag sizes (specified by length and width) for flags displayed over government agencies: 38.00 × 20.00; 19.00 × 10.00; 17.00 × 8.95; 11.00 × 7.00; 9.50 × 5.00; 5.50 × 4.33; 6.65 × 3.50; 4.00 × 3.00; 5.70 × 3.00; 4.50 × 2.37; and 2.50 × 1.32. Expressing each ratio as a decimal to the nearest hundredth, how many of these 11 flag dimensions are in the official 1.90:1.00 ratio?

The ratios, in increasing order, are: 1.27, 1.33, 1.57, 1.89, 1.90, 1.90, 1.90, 1.90, 1.90, 1.90, 1.90. The median or middle value ratio is 1.90.

What is the range of ratios?

The greatest ratio is 1.90 and the least ratio is 1.27. The range is 1.90 – 1.27 = 0.63.

What is the median ratio?

The ratios, in increasing order, are: 1.27, 1.33, 1.57, 1.89, 1.90, 1.90, 1.90, 1.90, 1.90, 1.90, 1.90. The median or middle value ratio is 1.90.

The ratio of the diameter of each star on the United States Flag to the hoist is 0.0616 to 1.0000. What is the diameter, in inches, of each of the 50 stars on a United States Flag that has a fly of 38 inches and a hoist of 20 inches? Express your answer as a decimal to the nearest hundredth.

The ratio of the star diameter to the hoist is 0.0616 to 1.000. Let d represent the diameter of the star. Use the proportion 0.0616/1.0000 = d/20 inches, and solve to get d = 1.23 inches.
Problem of the Week Archive

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