



PROBLEM OF THE WEEK #9
(Spring 2018)

The secret word is a certain 12-letter English word, which consists of exactly one letter from each pair below. For example, if the letter “D” appears in the secret word, then its partner “H” does not.

A B C D G I J K L M N V
F E X H Q O U S R T P Y

When the secret word is spelled correctly, and the unused partner of each letter is written beneath it, these partners appear in alphabetical order.

The secret word has the same number of letters in common with each of the following words:

FLICK CHROME FORMAT BEG PROBLEM

What is the secret word?

Solution:

If we list all 24 letters in alphabetical order, then list their partners below them, the letters of the secret word must appear in order among the partners.

A B C D E F G H I J K L M N O P Q R S T U V X Y
F E X H B A Q D O U S R T P I N G L K M J Y C V

Your eye may already be able to pick out the secret word in the lower row!

Because B/E are partners, BEG has at most two letters in common with the secret word. Because A/F and M/T are partners, FORMAT has at least two letters in common with the secret word. That means the secret word shares two letters with each given word. From BEG, the secret word contains G and not Q. From FORMAT, the secret word cannot contain OR, and therefore contains IL. From PROBLEM, the shared letters are L and B/E, so the secret word cannot contain MP, and therefore contains NT. From FLICK, the shared letters are I and L, so the secret word cannot contain CFK, and therefore contains ASX. From CHROME, the shared letters can only be EH, so the secret word contains EH and not BD. We make an alphabetical list of the letters that still might not be in the secret word, together with their partners:

B C D F J K M O P Q R U V Y
E X H A U S T I N G L J Y V

Clearly, the secret word contains UY and not JV, so the secret word is EXHAUSTINGLY.

Source: James Swenson; suggested by “Long Word” in [Sum86, pp. 65–66, 112–114]:

[Sum86] George J. Summers, *The great book of mind teasers & mind puzzlers*, Jaico Publishing House, Mumbai, 1986.