



Problem of the Week

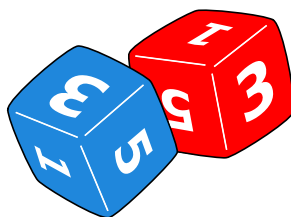
Problem C

Totally Unusual

The dice shown below are unusual. A usual six-sided die would have the numbers 1, 2, 3, 4, 5 and 6 on the sides. These dice, however, are unusual because the numbers on the six sides are 1, 2, 3, 5, 7 and 9.

Two of these unusual dice, one red and one blue, are rolled and the numbers on the upper faces are added together. A winning roll occurs when the sum is either a perfect square or a prime number.

Determine the probability that you win on any particular roll.



A *prime number* is an integer greater than 1 that has only two positive divisors, 1 and itself. For example, the number 17 is prime.

A *perfect square* is an integer that is the product of some integer and itself. For example, 9 is a perfect square since $3 \times 3 = 9$.

