Answer on Question #66364 – Math – Statistics and Probability

Question

Find the probability that the sum is as stated when a pair of dice is rolled. (Enter your answers as fractions.)
(a) odd and doubles

(b) odd or doubles

Solution

Total number of outcomes:
$$N = 6 * 6 = 36,$$
because scores on the dice are independent.
Odd sums: $(1,6), (1,4), (1,2), (2,5), (2,3), (2,1), (3,6), (3,4), (3,2), (4,5),$
$(4,3), (4,1), (5,6), (5,4), (5,2), (6,5), (6,3), (6,1).$
There are 18 pairs.
Doubles: $(1,1), (2,2), (3,3), (4,4), (5,5), (6,6).$
There are 6 pairs.

(a) $P(odd\ and\ doubles) = 0.$

(b) $P(odd\ or\ doubles) = \frac{18+6}{36} = \frac{24}{36} = \frac{2}{3}.$

Answer: (a) 0; **(b)** 2/3.