

8.6 Applications of Inclusion-Exclusion

8.6 pg. 564 # 1

Suppose that in a bushel of 100 apples there are 20 that have worms in them and 15 that have bruises. Only those apples with neither worms nor bruises can be sold. If there are 10 bruised apples that have worms in them, how many of the 100 apples can be sold?

8.6 pg. 564 # 3

How many solutions does the equation $x_1 + x_2 + x_3 = 13$ have where $x_1, x_2,$ and x_3 are nonnegative integers less than 6?

8.6 pg. 564 # 9

How many ways are there to distribute six different toys to three different children such that each child gets at least one toy?