Bowl of Raisins Problem

Solution: Let *x* be the number of raisins in the bowl. Then we have $50 \leq x \leq 100$. According to the given conditions, we have

$$x \equiv 4(mod5), \quad \ldots(1)$$

$$x - 4 \equiv 3(mod4), \quad \ldots(2)$$

$$x - 7 \equiv 2(mod3), \quad \ldots(3)$$

$$x - 9 \equiv 0(mod2). \quad \ldots(4)$$

(1) is satisfied by $x = 59, 69, 79, 89, 99$. 59 and 79 do not satisfy (3). 69 and 89 do not satisfy (2). Thus among these numbers only 99 satisfies all the above conditions as follows:

When 99 is divided by 5, the remainder is 4 which is eaten. The remaining 95 is divided by 4, the remainder is 3, which is eaten. The remaining 92 is divided by 3, the reainder is 2, which is eaten. The remaining 90 is divided by 2, the remainder is 0.

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