A fair coin is tossed n times. Let X = the number of times head occurs $P(X = 4), P(X = 5)$ and $P(X = 6)$ are in A.P., then the value of n can be

This question has multiple correct options

A 7

B 10

C 12

D 14

Correct options are A) and D)

P(X=4), P(X=5), P(X=6) is given by $\frac{C_4^n}{2^n}, \frac{C_5^n}{2^n}, \frac{C_6^n}{2^n}$ respectively.

Since they are in AP, we have: C_4^n, C_5^n, C_6^n in AP.

Thus, $C_4^n + C_6^n = 2 * C_5^n$

This is satisfied when n = 7 or 14.