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Q Given three integers n, a and b return n^{th} magical no. Answer may be very large return (10^9+7) mod.

=> Brute force Approach :-

i) Get the min of the given two elements.
ii) Keep two counters for both numbers starting with 1.
iii) Multiply both number with their respective counter and pick the minimum number increment the counter of respective number.
iv) Repeat step 3 for n times
v) return the last number
vi) The last number will be the required magical no.

=> Optimal Binary Search approach :-

i) Find the LCM of the given two numbers.
$$LCM = (a * b) / gcd(a, b)$$
ii) Set the range of binary searching :-
$$low = min(a, b)$$
$$high = n * min(a, b)$$
iii) Get the midpoint :
$$midpoint = (low + high) / 2$$
iv) For each midpoint count magic :
$$magic = midpoint/a + midpoint/b - midpoint/lcm$$

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v) If If magic < n :
move low to midpoint
else
move high to midpoint

vi) return (high) %. (10^9+7)