## Problem: What is the least positive integer multiple of 30 that can be written with only the digits o and 2?

## Response (Beam Search with RLHFlow-Mistral-PRM-8B): # of Tokens: 890

## Step 1: The least positive integer multiple of 30 must be divisible by 10 and 3. \nSince it can only be written with the digits 0 and 2, it must contain at least one 0 to be divisible by 10. [score=0.42]

## Step 2: To be divisible by 3, the sum of its digits must also be divisible by 3.\nThe possible sums of digits are 2, 4, 6, and so on, but only 6 is divisible by 3 and achievable with the digits 2 and 0. [score=0.62]

## Step 3: We can achieve a sum of 6 by using the number 220 or 022, but we cannot use leading zeros. In The number 220 is the smallest multiple of 30 that can be formed with the digits 0 and 2. ku\n [score=0.56]

## Step 4: Multiplying 220 by 3 results in 660, which is a multiple of 30.\nWe've found the least positive integer multiple of 30 that can be written with only the digits 0 and 2. [score=0.87]

Therefore, the final answer is: \$\\boxed{660}\$. [score=0.81]



## Response (Beam Search with RLHFlow-Deepseek-PRM-8B): # of Tokens: 2419

## Step 1: Determine the divisibility requirement for the number \nTo be a multiple of 30, a number must be divisible by both 2 and 3. [score=0.85]

## Step 2: Consider the divisibility by 2\nFor a number to be divisible by 2, it must end in 0, since it's the only way it will be even. [score=0.89]

## Step 3: Consider the divisibility by 3\nFor a number to be divisible by 3, the sum of its digits must be divisible by 3. [score=0.92]

## Step 4: Determine the least possible number meeting these requirements\nThe smallest number that can be formed with the given digits (0 and 2) and ends in 0 is 200. However, the sum of its digits (2 + 0 + 0 = 2) is not divisible by 3. [score=0.85]

## Step 5: Find the next possible number meeting the requirements \nThe next number to try is 220. The sum of its digits (2 + 2 + 0 = 4) is still not divisible by 3. [score=0.91]

## Step 6: Determine the next possible number meeting the requirements \nThe next number is 2200. The sum of its digits (2 + 2 + 0 + 0 = 4) is still not divisible by 3. [score=0.91]

## Step 7: Find the next possible number meeting the requirements \nThe next number to try is 2020. The sum of its digits (2 + 0 + 2 + 0 = 4) is still not divisible by 3. [score=0.88]

## Step 8: Determine the next possible number meeting the requirements \nThe next number is 22000. However, we can notice that the sum of the digits is still not divisible by 3. [score=0.88]

## Step 9: Consider a number with more 2s\nInstead of adding more 0s, try adding more 2s to meet the divisibility requirement of 3. [score=0.91]

## Step 10: Find the next possible number meeting the requirements \nThe next number to try is 2220. The sum of its digits (2 + 2 + 2 + 0 = 6) is divisible by 3. [score=0.85]

Therefore, the final answer is: \$\\boxed{2220}\$. [score=0.81]

