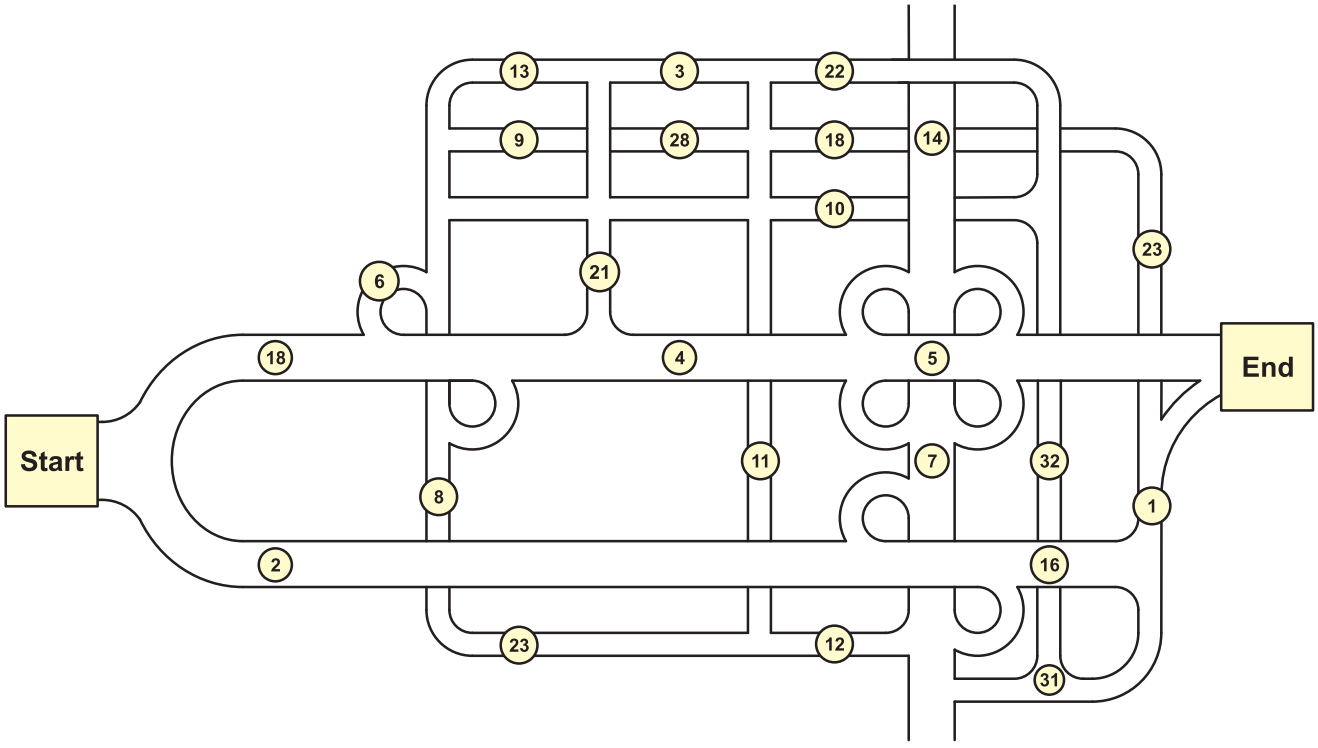
This brainteaser was written by Patrick Vennebush.

On the map below, begin at Start. Travel the roads along any path you like, following typical traffic laws, and each time you pass a number, add it to your current sum. However, you are not allowed to pass any number more than once. Can you reach End with a sum of 91?



Solution: Pass the markers in this order: 18, 13, 3, 11, 23, 8, 6, 4, 5.

Because of the restriction that each marker can only be passed once, it must be true that the end of your route must pass either 4 then 5 or must pass 31 then 1. Consequently, you should look for routes that do not eliminate those routes too early.

But the solution really relies less on knowing where you should go and more on knowing where you *cannot* go. If you head to the right from Start, nothing good can happen. You first pass 2, and then there are several choices:

- If you pass 16, make a left and pass 1 and 23, you're forced to hit 18. That gives you a sum of 2 + 16 + 1 + 23 + 18 = 60; the numbers along every possible route from there to End sum to more than the 31 that you still need.
- If you instead exit to pass 7, you're then forced to exit again and pass 5. (If you don't, you'll pass 14 but then head off the map!) You'll then pass 4, and your total so far is 2 + 7 + 5 + 4 = 18. That's less than the needed total of 91.
    - You can then make a left and pass 21 to bring your total to 39, but then there are no exit routes with just 52 points remaining.
    - Alternatively, you could exit and pass 6, but then you're stuck on the bottom road, which will again take your total too high.
- There are other options, too; all of them that appear promising at first eventually force you to pass the same number more than once, which is not allowed.

The path with a sum of 91 is shown below.