



## Problem of the Week

### Problem E

#### A Tale of Two Towns

Two towns, Centreville and Middletown, had the same population at the end of 2022.

The population of Centreville decreased by 2.5% from the end of 2022 to the end of 2023. Then, the population increased by 8.4% from the end of 2023 to the end of 2024.

The population of Middletown increased by  $r\%$ , where  $r > 0$ , from the end of 2022 to the end of 2023. Then, the population of Middletown increased by  $(r + 2)\%$  from the end of 2023 to the end of 2024.

Surprisingly, the populations of both towns were the same again at the end of 2024. Determine the value of  $r$ , rounded to the nearest tenth.

