

# A Lesson in Pulling a Goalie

## Description

Babs is interested in learning the best time to pull a goalie when coaching his new NHL hockey team. As head of analytics for the Toronto Maple Leafs he tasks you to find the best time to pull his goalie when his team is down by 1 goal. He is interested in all one goal deficits when less than 5 minutes left in the game. The probability for a goal being scored in each 1 second interval (5:00 – 4:59, 4:59 – 4:58, etc.) is outlined in the table below. Assume that only 1 goal can be scored in each 1 second interval. When is the best time to pull your goalie such that you maximize your chance of tying the game before the game finishes?

|                               | Goalie Not Pulled | Goalie Pulled |
|-------------------------------|-------------------|---------------|
| Your Team Scores a Goal       | 0.0025            | 0.0120        |
| Goal Scored Against Your Team | 0.0030            | 0.0200        |

## Solution Format

Submit the time that Patrick should pull his goalie with respect to the time remaining in the game. Your submission should be a txt file with a single number corresponding to the seconds remaining in the game.

## Sample Solution

If the best time to pull your goalie is immediately before the interval 450-449 seconds, then you should submit a txt file in the following format:

450