EXAM MLC QUESTIONS OF THE WEEK

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Week of May 7/07

The team statistician for the Toronto Thrashers hockey team uses a Poisson process to describe the number of goals scored by the team. According to this model, goals are scored at a rate of 1 every 30 minutes of playing time. The team statistician for the Montreal Maulers hockey team also uses a Poisson process with a rate of 1 goal scored every 20 minutes. When the two teams play each other, it is assumed that the teams score goals independently. Suppose that the Thrashers and Maulers play a game together. Suppose that a 60 minute game ends with a score of Thrashers 2, Maulers 1. Find the probability that the Thrashers scored the first goal and were ahead for the rest of the game (had more goals at any time during the game after the first goal).

A) .08   B) .16   C) .24   D) .32   E) .40

The solution can be found below.

Week of May 7/07 - Solution

The Thrashers will have been ahead for the entire game if they scored both goals before the first Maulers goal. This will be true only if the first two goals are Thrasher goals. Each goal has a $\frac{2}{5} = .4$ chance of being a Thrasher goal, so the probability that both of the first two goals are Thrasher goals is $(.4)(.4) = .16$.   Answer: B