1135-VR-2670 **Tucker R. Rhodes*** (tuckerrhodes@cedarville.edu), Tucker Rhodes, 251 N. Main St., P.O. Box #5065, Cedarville, OH 45314, and **Adam J. Hammett** and **Nathan A. Harold**. *Does Logic Help Us Beat Monty Hall?*

The classical Monty Hall problem entails that a hypothetical game show contestant be presented three doors and told that behind one door is a car and behind the other two are far less appealing prizes, like goats. The contestant then picks a door, and the host (Monty) is to open a different door which contains one of the bad prizes. At this point in the game, the contestant is given the option of keeping the door she chose or changing her selection to the remaining door (since one has already been opened by Monty), after which Monty opens the chosen door and the contestant wins the prize which lies behind it. Inspired by the work of Morrow, Oman and Salminen (2016, "Game Show Shenanigans: Monty Hall Meets Mathematical Logic," Elemente der Mathematik 71(4), pp. 145-155), we consider several logic-themed variants of this problem. Among these are versions where d doors and p prizes reside behind some p of these doors, and the contestant is permitted to present Monty with q random true/false questions concerning the location of the prizes, to which Monty must respond truthfully. Our results extend those of the original paper, and involve a combination of probabilistic techniques and exhaustive computation using a computer program. (Received September 26, 2017)