ZMATH 2016c.00104

IM^{2}C: 2015 International Mathematical Modeling Challenge.

Consortium 109, 19-38 (2015).

From the text: The purpose of the IM^{2}C is to promote the teaching of mathematical modeling and applications at all educational levels for all students. It is based on the firm belief that students and teachers need to experience the underlying? power of mathematics to help better understand, analyze and solve real world problems outside of mathematics itself – and to do so in realistic contexts. The Challenge has been established in the spirit of promoting educational change. The article also contains the two submitted models on the 2015 IM^{2}C problem delivered by the outstanding team from Raffles Girls' School (Secondary) which is a good example for using visualizations. The 2015 IM^{2}C Problem (Movie Scheduling): A great deal of preparation must take place before a movie can be filmed. Important sets and scenes need to be identified, resource needs must be calculated, and schedules must be arranged. The issue of the schedule is the focus of the modeling activities. A large studio has contacted your firm, and they wish to have a model to allow for scheduling a movie. You should provide examples and test cases to convince the movie executives that your model is effective viable? and robust.

Classification: B60 M90
Keywords: mathematical model building; student competitions; mathematical applications; real-life mathematics; movie scheduling; filmmaking process; film production; directed acyclic graphs; complete search model; rarity model; complete search algorithms; edges; nodes; weighting; relative order; duration; trees; renormalization; resource availability; time requirements; dependency; sets; scenes; modifications