NOVA

Performance Expectations

The government agency that sponsored the autonomous vehicle race, the Defense Advanced Research Projects Agency, hopes to someday be able to use unmanned vehicles in military operations. An ideal vehicle for this use would be lightweight in order to be efficiently transported, be able to travel as far as possible on its given fuel supply, and be able to carry mission cargo. Given these objectives, each vehicle in your design challenge will be judged on the following criteria:

- weight (the lightest vehicle)
- maximum distance traveled (the vehicle that goes the farthest)
- load carrying capacity (the vehicle that can go farthest with a 250-gram load)

Maximum distance traveled will be measured from a point on the start line to the final resting point of the vehicle.

The winning vehicle in each of the above categories will have a score of 1, the second best vehicle a score of 2, etc. Thus the best possible score is 3 for a vehicle that won each of the above categories. The overall winner will be the vehicle with the *lowest* combined score.

Note that it is quite possible for a vehicle to win in two of the three categories and still lose overall by having a very high score in the third. For example: Vehicle A wins in the first two categories (2 points) but comes in last for a score of 10 in the third. Vehicle A's total score is 12 (1+1+10). Vehicle B comes in second, second, and third, respectively, and wins overall with a score of 7 (2+2+3).