A "Timerless" Lane Rotation Strategy

Use this if you have an electronic finish line, but no timer. With 20 cars entered, this process determines 1st, 2nd, 3rd place with 95% accuracy.

Step 1. Start with cars 1-6 positioned in lanes 1-6. Run this race and note the placement at the finish line. For example, your finish line might read

Lane	1	2	3	4	5	6
Place	3	1	2	6	4	5

indicating that the car in lane 2 finished 1st, and the car in lane 4 finished last.

Step 2. Record the positions along the diagonal shaded boxes. In our example above, the race positions were 3 1 2 6 4 5, so we enter:

	Lane							
Car #	1	2	3	4	5	6	total	rank
_001	3							
_002		1						
_003			2					
_004				6				
_005					4			
_006						5		
_007								
_008								
_009								

Step 3. Rotate the cars to the left. The car that was in lane 1 (car #1) goes to the end of the line, and won't race again until near the end of this round. Car #2 goes into lane 1, etc. Car #7 joins the race in lane 6. We run this next race and record the finish positions. For example, suppose this time we get

Lane	1	2	3	4	5	6
Place	1	3	6	5	4	2

indicating that the car in lane 1 came in 1st and the car in lane 3 came in last. We record the positions for the second race alone the next diagonal line:

	Lane							
Car #	1	2	3	4	5	6	total	rank
_001	3							
_002	1	1						
_003		3	2					
_004			6	6				
_005				5	4			
_006					4	5		
_007						2		
_008								
_009								

Step 4. Keep rotating the cars to the left, moving the car in lane 1 to the end of the line, and adding the next available car into lane 6. Record the positions at the end of each race along the diagonal shaded boxes.

Step 5. At the end of the first round you should have run as many races as you have cars. Transfer the positions from the bottom 5 rows to the white space at the top of the chart:

_018	2	6	3	6	5	3		
_019	1	1	2	5	3	6		
		5	3	3	4	1		
			4	5	5	1		
				3	6	4		
					6	4		
						2		

If you have…

	Lane							
Car #	1	2	3	4	5	6	total	rank
_001	3	5	3	3	4	1	*19*	
_002	1	1	4	5	5	1	*17*	
_003	2	3	2	3	6	4	*20*	
_004	2	4	6	6	6	4	*28*	
_005	5	1	6	5	4	2	*23*	
_006	2	2	4	5	4	5	*22*	
_007	3	1	1	3	3	2	*13*	
_008	5	1	6	6	6	1	*25*	
_009	4	6	5	5	4	5	*29*	

then you write…

Step 6. Total up the positions for each car, ignoring the final 5 races (see above). Rank each car according to the total. The car with the lowest total gets a "1", the car with the second lowest total gets a "2", etc.

Step 7. Select the 6 cars with the lowest rank. If there are ties, add up to an additional 2 cars. Repeat the lane rotation event with these selected cars. The cars with the lowest rank at the end of this second round take 1st, 2nd, and 3rd place respectively. In the event of a tie, run a 3rd round with the tied cars, adding the 4 slowest cars from the first round.

http://pinewoodphysics.com

Car #	1	2	3	4	5	6	total	rank
_001								
_002								
_003								
_004								
_005								
_006								
_007								
_008								
_009								
_010								
_011								
_012								
_013								
_014								
_015								
_016								
_017								
_018								
_019								
_020								

Add numbers for additional entries (max. 36 entries)

Top 6-8 cars from first round

Class_____

Car #	1	2	3	4	5	6	total	rank

1st _____

2nd _____

3rd _____

Winners!

A tie for 1st, 2nd, or 3rd above requires a third round to break the tie. Use the table below.

Car #	1	2	3	4	5	6	total	rank