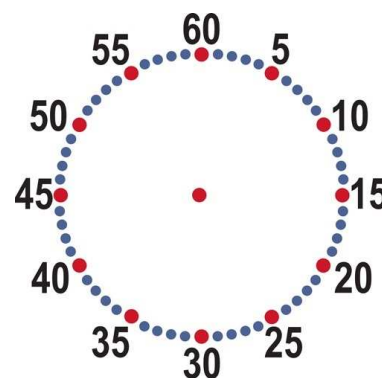


Please answer each question carefully and completely. If you feel a question is ridiculous then you must give a ridiculous answer. Every question on this test can be answered, but snark and drawings are accepted as well. A blank pace clock has been provided for your convenience in solving these problems.



Name: _____

1. (20 points) The set is 12x50 Free on the 1:35. You started on the 60.
 - (a) (10 points) At what second will you start the 10th 50? _____
 - (b) (10 points) If it takes you 1:07 to swim each 50, what percentage of the time will you be swimming? _____

2. (20 points) You are doing a ladder set, where you begin by swimming a 400 Free and each subsequent swim is half as long, *ad infinitum*:
 - 400 Free
 - 200 Free
 - 100 Free
 - 50 Free
 - 25 Free
 - 12.5 Free
 - 6.25 Free
 - ⋮
 - (a) (15 points) At the end of the set, how many yards will you have swum? _____
 - (b) (5 points) If the 400 is on the 9:00 and the pace stays the same, how long will the set take to complete? _____

3. (20 points) It is 5:00 am and coach George is busily shoveling ice into the pool to cool it off enough for Swim Team Prep. He notices that even though water gets denser as it cools, the surface of the pool freezes before the bottom does. Why do you think this is?

4. (20 points) Lane 5 started a set of 12x100 IM on 2:50 at 6:19 pm. The time is now 6:38.
 - (a) (10 points) How many of the 12 100s has lane 5 completed? _____
 - (b) (10 points) At what second will they begin the next one? _____

5. (20 points) How many hands should you use to finish a race of each stroke?
 - (a) (5 points) Butterfly: _____
 - (b) (5 points) Backstroke: _____
 - (c) (5 points) Breaststroke: _____
 - (d) (5 points) Freestyle: _____

6. (40 points) In your own words, explain why you chose those exact words to answer this question.

7. (40 points) There is an out-of-control trolley hurtling down the track towards a whiteboard that reads “6x800 IM on 11:00/13:00/15:00”, on which hang numerous flippers that, should they survive, coach George has promised to let everyone use every day for the rest of the year. Next to you is a lever that, if pulled, would divert the train to instead collide with a truck full of delicious pastries, brand new game consoles, and books on swimming theory that strongly endorse easier sets (don’t worry; the driver is on his coffee break and out of harm’s way). You also happen to be on a bridge above the trolley, and next to you is a stone slab that reads “2,000 Relaximum”, which is not only probably a valuable artifact but also just heavy enough to stop the trolley if you were to nudge it off of the bridge.

Coach George is nearby, and it can be assumed would be inspired enough by your decision to use it to inform his coaching methods, as well as those of other coaches. What do you do, and why?

8. (40 points) Some questions about turns:

(a) (10 points) You have just done a flip turn and your feet are on the wall. Which direction should your toes be pointing?

(b) (10 points) You are doing an open turn and your feet are on the wall. Which direction should your...

i. (5 points) ... belly button be pointing? _____

ii. (5 points) ... face be pointing? _____

(c) (10 points) Which strokes use flip turns?

(d) (10 points) Which strokes use open turns?

9. (40 points) Consider the *substance metaphysics* of Parmenides, which treats existence as a static “snapshot” to be thought of outside of time. Can swimming be understood using this model, or is a *process metaphysics* such as that of Alfred North Whitehead required? Zeno’s paradoxes, like that represented by Question 2 in this exam, attempted to defend Parmenides’s assertion that motion must be an illusion. Using swimming as your central example, compare and contrast the two positions.