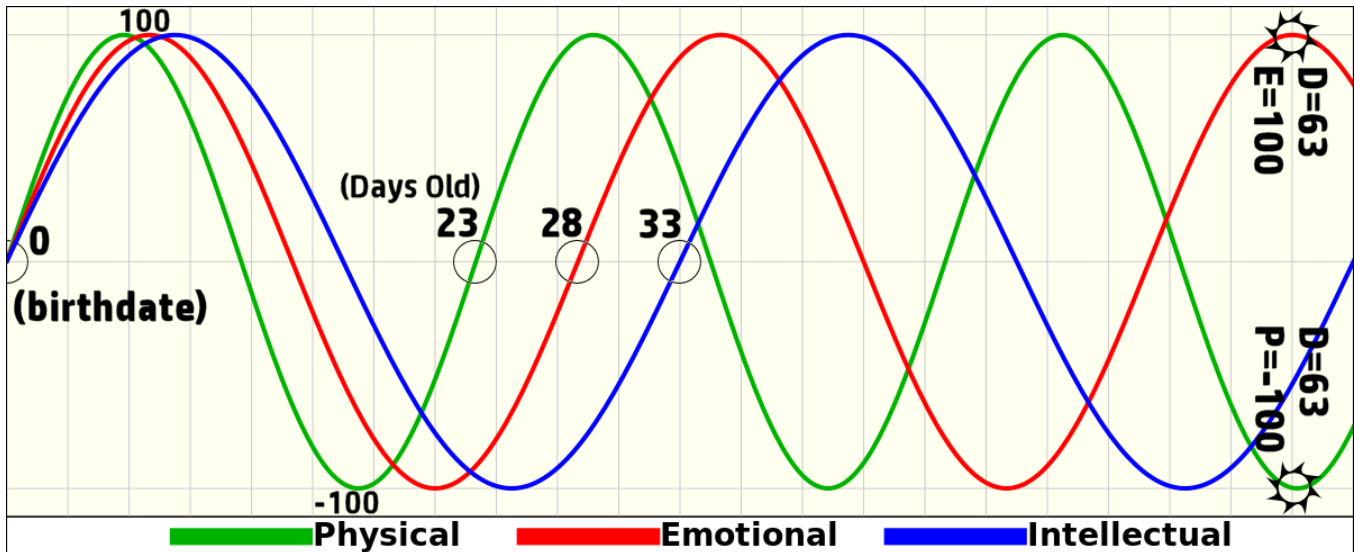


HHC 2018 Programming Contest

Biorhythms: Next Extrema Date



The thoroughly-debunked “Biorhythm Theory” states that our Physical, Emotional, and Intellectual cycles begin at zero on the day of our birth, then progress in precise sine waves as seen above, rising to 100 (best) then falling to -100 (worst) then returning to zero again in exactly 23 days, 28 days, and 33 days respectively. (Biorhythms are traditionally given as percentages without the % mark, and rounded to the nearest integer).

Once in a while, two cycles hit 100 and/or -100 simultaneously, as you can see on Day 63 above. Let’s call this an “Extrema Date”. The Wikipedia article about biorhythms states that nobody considers Extrema Dates significant in any way, which is why there is no existing software for calculating them... until now.

YOUR CHALLENGE: Write a program (in HP-41 RPN, and/or RPL, and/or PPL) which inputs the user’s birthdate, then outputs the next Extrema Date (not including today) with all three biorhythm values for that date. How you calculate the Extrema date (there are many ways), and how many of them you output (only one is required), and the format in which you output them, and the user interface for the input and outputs, are all left entirely up to your creative genius and sense of programming elegance.

N.B. When testing the contest entries, the judge will only input birthdates between 1 Jan 1900 and 28 Sep 2018.

To enter the contest, you must submit two things to the contest judge (Joe Horn) before the announced deadline:

- (1) Your **calculator** with your **name** on it (little removable stickers available on request) and your **program** already keyed into it, in testable condition. Joe will test your program on your calculator.
- (2) A **listing** of your program (hand written or printed) with your **name** on it, with **comments** (inline and/or accompanying, as you wish) explaining how your program works, and any

features of it that you deem worthy of note. These written comments are your only chance to convince Joe that your program is **elegant**; he will ignore all verbal comments. Make double sure that your listing is identical to the program in your machine, since all entries will be published.

The winner will be the Most Elegant Program, not necessarily the fastest or smallest program (although bloatware is rarely elegant). Since Elegance is multifaceted and subjective, the decisions of the contest judge will be final. There will be one winner in each of the three categories (HP-41 RPN, RPL, and PPL). The winners will receive a frameable Best Programmer certificate and an early pick from the Door Prize table.

Hint: There are many non-obvious ways to approach this challenge. The user interface, the method for calculating the Extrema dates, and the presentation of the listing with comments, all admit of variety and creativity, so be creative. Impress the judge. Aim for Elegance.

CONTEST RULES:

1. The purpose of this contest is to have fun, to learn, and to advance the notion that programming is a creative art form.
2. The winner is the most elegant program. Since elegance is subjective, the decision of the judge is FINAL. Bonus points for making the judge gasp in awe. Negative points for making the judge gasp in horror.
3. The program must be a single stand-alone program which can run by itself in an otherwise empty machine (with no modules [except the HP-41 Time Module] or libraries or anything else installed).
4. You must submit a machine with your program already keyed in to the judge with your name on the machine (little removable stickers available upon request). Machines with no names that are given to the judge are assumed to be gifts to the judge. Thank you very much.
5. You must also submit a listing of your program (hand written or printed), with comments (inline and/or accompanying, as you wish) explaining how your program works, and any features of it that you deem worthy of note. This is your chance to convince Joe that your program is elegant. Make double sure that your listing is identical to the program in your machine, since all entries will be published.
6. Assume default machine settings when the program is first run, EXCEPT the system date will be assumed to be current, and all RPL models will be assumed to be in RPN mode. The HP 49 & 50 may use Library 256 commands since they are built-in.
7. All entries must be able to run in whatever machine is submitted. Only HP calculators or true emulators (which use HP ROM code) are eligible. Simulators which use non-HP code (e.g. the DM42) are not eligible.
8. RPL submissions can be in any HP RPL machine as long as they run on it (28, 48, 49, or 50); the program needn't be forward or backward compatible with any other RPL model. PPL submissions can be in any HP Prime with any released firmware version.
9. Submission must be made by the end of the contest (time is TBA, usually end of Sunday lunch break). You must be present to win.
10. By submitting a program, you agree to allow it to be shared with the community. All submissions will be emailed to the HHC mailing list and posted on the MoHPC Forum.
11. This is a contest between individuals, not teams. You may not submit more than one entry per category (41CX RPN, RPL, and PPL).
12. If a point is unclear, ask immediately. No excuses for ignorance. Clarifications will be shared with the entire group during the conference.