It is well-known that chess computers are very good at solving problems, often finding the solution before a human being has had the time to become familiar with the problem. Even Grand Masters have had to bite the dust.

As far back as the era of Chess Challenger 10, its ability to solve mate-in-2 problems was impressive. Nowadays, of course, the best machines outperform Chess Challenger 10 by factors of many hundreds.

We have tested 18 chess programs on 16 arbitrarily chosen problems by Samuel Loyd. We found the following ranking for the top fourteen:

1. Conchess 4 MHz  914  8. Turbostar  115
3. Matebadix Intelligent 438  10. Constellation 2.0 MHz  98
4. Super Constellation 223  11. Mephisto Exclusive S  86
5. Constellation 3.6 MHz  177  12. Prestige  39
6. Elite A/S 3 MHz  151  13. Capablanca  30

The number of points behind the ranking has been arrived at simply: the fastest program to solve any problem was given 1,000 points. Competitors were given points inversely proportional to their solution times. The results above are averages over the 16 problems. The ranking scheme may be challenged - your proposals are invited.

The table compares speed only for those computers which indeed were capable of solving all problems set. (Four failed and, while eliminated in the table above, still have such solutions as they did find recorded below.) Evidently Conchess outdoes all its competitors in problem solving. This may be related to their programming team Ulf Rathsman and Johan Enroth having a penchant for chess problems.

A few words are in order on Matebadix Intelligent. Ilka Blom, from Finland, programmed it (see ICCA Journal, Vol. 7, No. 1, pp. 56-57) and it is now commercially available on diskette and tape for the Commodore 64 and other computers, with Apples having a slight time advantage. Using accelerator cards, speeding up the processors by a factor of 3.5, would promote Matebadix Intelligent to the top of our list since the Commodore 64 is no faster than around 1 MHz.

In conclusion, we may state that there are vast time differences in problem-solving ability. For the 14 computers listed, they do not affect the quality of solutions, since all of them are up to Samuel Loyd. The time differences are mainly ascribable to processor rates and programming tactics. A 'Which?' ranking would dissuade intending customers from buying any of the programs not listed above and urge them to acquire programs by their stated ranking whenever problem-solving speed is of the essence.
MATE-IN-2 PROBLEMS

Problem 1

White: Kh1 Qa8 Ra5 Rh5 Bb3 Bg7 Ne4 b6 d7 e6 f3 g3;
Black: Kb4 Qg6 Rd3 Rf8 Bd8 Ne1 c2;
Solution: 1. Rf5

Problem 2

White: Kh7 Qa3 Re3 Rf2 Bg2 Bh2 Nd1 Nd2 c2 e5 g6;
Black: Kd4 Qc8 Rc1 Rf6 Bb1 Ng7 Ng8 c4 d6 g5 h4;
Solution: 1. Rg3

Problem 3

White: Kf1 Qa4 Rb2 Rf8 Ba1 Bf3 Nd1 Nf5 c5 h4;
Black: Ke5 Qa2 Ra8 Rf4 Bg3 Ne6 d6 d5 e6;
Solution: 1. Bh2

MATE-IN-3 PROBLEMS

Problem 4

White: Kh3 Qc2 Rb2 Rf8 Ba1 Bf3 Nd1 Nf5 c5 h4;
Black: Ke5 Qa2 Ra8 Rf4 Bg3 Ne6 d6 d5 e6;
Solution: 1. Bh2

Problem 5

White: Kf1 Ra5 Rf6 Bb5 Bg7 Nb6 Ne4 b4 d2;
Black: Ke5 Rc8 Rh2 Bg3 Bg8 Na2 Nh1 a6 b7 c3 e6 f2 h4;
Solution: 1. Ke2

Problem 6

White: Kh7 Rd7 Re2 Ba6 Bc7 Nb5 a4 b3 g4;
Black: Ke5 Rh2 Ba8 Nf3 Nh1 a5 a7 b4 c6 g5 g7 h4;
Solution: 1. Bb7

Problem 7

White: Kg8 Rb3 Rf3 Bd4 Bf1 Nd1 Nf7 c7 f2 g3;
Black: Kg4 Qc1 Rh6 Ba5 Nh5 Na4 Na7 c5 d2 d5 e4 g6 h3 h7;
Solution: 1. Rb6

MATE-IN-4 PROBLEMS

Problem 8

White: Kel Qd4 Bg3 Na6 Nd6 e5;
Black: Kc6 Ba2 Na8 b5 b6 d7 e6 f7 g6;
Solution: 1. Qg1
Problem 9
White: Ka8 Qh8 Rg2 Be1 Bf1 Nh4 a5 b6 f4 g5 h6;
Black: Kh3 Qc6 Na2 Nb1 a6 b7 d5 e4;
Solution: 1. Bxa6

Problem 10
White: Ka3 Rd4 Rh1 Bc1 Bd1 Nc3 Nc3 b2 b6;
Black: Ka1 Qb1 Rd7 Rd8 a4 b7 c6 d5;
Solution: 1. Rdh4

Problem 11
White: Kh6 Ra1 Rd8 Bg8 Na5 Nc4 c2 d2 e6 f3 f4;
Black: Kc5 Bb8 Nc7 a7 a6 e7;
Solution: 1. Rc8

MATE-IN-5 PROBLEMS

Problem 12
White: Kc1 Ra2 Rf1;
Black: Kh1 Bh1 a5 h2;
Solution: 1. Raf2

Problem 13
White: Ke7 Rh3 Bd4 g4;
Black: Kg7 Re6 Bg8 f7;
Solution: 1. Rh6

Problem 14
White: Ke1 Bh6 c2 e2;
Black: Kg1 Qh1 Rg3 Ba8 c3 g2 h2 h5;
Solution: 1. Bc1

Problem 15
White: Ka1 Re8 Nd3 Bb5 Be5 d6;
Black: Kd5 Rg7;
Solution: 1. Re8

MATE-IN-6 PROBLEM
White: Kf2 Ne2 Nh5;
Black: Kh1 Na6 Nb6 c5 e7 h7;
Solution: Nh6

[Problem positions are presented algebraically for programmers' convenience; the Swedish equivalent of this contribution may be found in PLY, 1985, No. 2.]
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The solution times have been given in seconds, counting to the instant when the computer declared its solution to be final. Dashes refer either to no solution being found or to 'solutions' involving too many moves.