

$$E_1 \approx \tilde{E}_1 = 3.67879 \times 10^{-1}$$

$$E_2 \approx \tilde{E}_2 = 2.64242 \times 10^{-1}$$

$$E_3 \approx \tilde{E}_3 = 2.07274 \times 10^{-1}$$

$$E_4 \approx \tilde{E}_4 = 1.70904 \times 10^{-1}$$

$$E_5 \approx \tilde{E}_5 = 1.45480 \times 10^{-1}$$

$$E_6 \approx \tilde{E}_6 = 1.27120 \times 10^{-1}$$

$$E_7 \approx \tilde{E}_7 = 1.10160 \times 10^{-1}$$

$$E_8 \approx \tilde{E}_8 = 1.18720 \times 10^{-1}$$

$$E_9 \approx \tilde{E}_9 = -6.84800 \times 10^{-2}$$

$$E_{15} \approx \bar{E}_{15} = 5.90176 \times 10^{-2}$$

$$E_{14} \approx \bar{E}_{14} = 6.27322 \times 10^{-2}$$

$$E_{13} \approx \bar{E}_{13} = 6.69477 \times 10^{-2}$$

$$E_{12} \approx \bar{E}_{12} = 7.17733 \times 10^{-2}$$

$$E_{11} \approx \bar{E}_{11} = 7.73523 \times 10^{-2}$$

$$E_{10} \approx \bar{E}_{10} = 8.38771 \times 10^{-2}$$

$$E_9 \approx \bar{E}_9 = 9.16923 \times 10^{-2}$$

real		complex	
1	1.0 0000 0000	10	$10.095266145 + 0.643500904 i$
2	2.0 0000 0000	11	$10.095266145 - 0.643500904 i$
3	3.0 0000 0000	12	$11.793633881 + 1.652329728 i$
4	4.0 0000 0000	13	$11.793633881 - 1.652329728 i$
5	4.9 9999 9928	14	$13.992358137 + 2.518830070 i$
6	6.0 0000 6944	15	$13.992358137 - 2.518830070 i$
7	6.9 9969 7234	16	$16.730737466 + 2.812624894 i$
8	8.0 0726 7603	17	$16.730737466 - 2.812624894 i$
9	8.9 1725 0249	18	$19.502439400 + 1.940330347 i$
20	20.8 4690 8101	19	$19.502439400 - 1.940330347 i$

TABLE 8.1

*Exact roots of  $(x - 1) \dots (x - 20) - 2^{-23}x^{19}$*