



STEP II, 1998, Q2

- 2 Use the first four terms of the binomial expansion of $(1 - 1/50)^{1/2}$, writing $1/50 = 2/100$ to simplify the calculation, to derive the approximation $\sqrt{2} \approx 1.414214$.

Calculate similarly an approximation to the cube root of 2 to six decimal places by considering $(1 + N/125)^a$, where a and N are suitable numbers.

[You need not justify the accuracy of your approximations.]



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