Problem statement Suppose A and B are positive numbers. Decide whether the following sequences converge. If they converge, try to find their limits. Your answers may involve both numbers and their relationship.

a) $c_n = \sqrt[n]{A^n + B^n}$ b) $d_n = \sqrt[n]{A^n + B}$

Hint Experiment! Choose various values of A and B and compute the first five or ten terms of each sequence. Then verify your guesses in general with algebra and calculus.