Rate of Convergence of Sequences

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Name (Print) :

Help (Name Individuals or Websites) :

Directions

- If you are submitting this assignment as an informal response:
  - print out this page, complete the solutions with a pen or pencil, and scan as a pdf document for submission, OR
  - or complete the the problems on paper in the order in which they are assigned and scan the document as a pdf.
- If you are submitting this assignment as a formal response, you must type your solutions in LaTeXand submit the generated pdf.

Part of Homework

1. Find the order of convergence of the following sequences as $n \to \infty$. Write your answer in the form $\alpha_n = \alpha + O(\beta_n)$. Also, write a sentence stating your conclusion regarding the significance of your mathematical work, in other words, what conclusion can you draw from your work?

   a) $\{\alpha_n\} = \left\{ \left(\sin\left(\frac{1}{n}\right) \right)^2 \right\}$

b) $\{\alpha_n\} = \left\{ \dfrac{1-2n^2}{3n^2+n-1} \right\}$

c) $\{\alpha_n\} = \left\{\dfrac{2^n+3}{2^n+7}\right\}$