

Short solutions of the suggested list of exercises

- 1) a) The value is ∞ since the series is monotonic increasing and unbounded,
- b) The value is 1,
- c) The value is 2.
- 2) i) Divergent, Comparison Test by $1/2n$,
- ii) Convergent iff $s > 1$,
- iii) Convergent, Integral Test,
- iv) Convergent, Limit Comparison with $1/n^{5/2}$,
- v) Convergent, Root Test,
- vi) Convergent, Ratio Test,
- vii) Convergent, Root Test,
- viii) Divergent, n-th Term Test,
- ix) Divergent, n-th Term Test,
- x) Convergent, Ratio Test,
- xi) Divergent, Ratio Test.

P.S: You need to provide more detailed explanations in the exam.