

DEPARTMENT OF MATHEMATICS
COMSATS University Islamabad, Attock Campus

Assignment # 2

Class: MSc: Sem. III

Course Title: Convex Analysis

Instructor: Dr. Atiq ur Rehman

Max. Marks: 10

Course Code: MTH424

Due Date: 25-11-2020

Instructions:

- Please name the PDF as **a2-mth424-xyz**, where xyz is last three digits of your registration number (e.g. if your registration number is fa19-mmt-041, then name file as a2-mth424-041) before submission.
- Similarity of a solution with other students may reduce your marks.
- Please make sure that the PDF is good before sending and email at **atiq+mth424@cuiatk.edu.pk**
- Please send the solution by email only one time (don't send multiple emails).

Question 1:

Let $\{f_n\}$ be a sequence of convex function on I . Prove that if $\sum_{n=1}^{\infty} f_n(x)$ converges to $f(x)$, then f is convex on I .

Question 2:

Find the value of p for which $\log x^{1-p}$ is convex on $(0, \infty)$.



Course page: www.mathcity.org/atiq/fa20-mth424