COMSATS University Islamabad
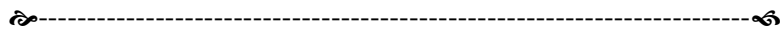## Attock Campus

Department of Mathematics
Assignment # 02

Class: BSM-VII
Subject: Convex Analysis
Instructor: Dr. Atiq ur Rehman

Due Date: 05-03-2024
Course Code: MTH424
Marks: 9

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Question # 1

Prove that if f is convex on *I*, then $F(x) = \dfrac{f(x) - f(c)}{x - c}$, $x \neq c$ is increasing on *I*.

Question # 2

If *f* is convex on $[a,b]$, then prove that

$$f\left(\frac{a+b}{2}\right) \leq \frac{f(a) + f(b)}{2}.$$