COMSATS University Islamabad

Attock Campus

Department of Mathematics

Assignment # 02

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

Due Date: 24-3-2025 (11:00AM)
Course Code: MTH424
Marks: 20

Note:

- Submit hardcopy or you may send PDF at atiq+mth424@cuiatk.edu.pk having name "*sp25-mth424-a02-xyz.pdf*" where *xyz* is last three digits of your registration number.

Question # 1

Please include the following statement, followed by your signature:

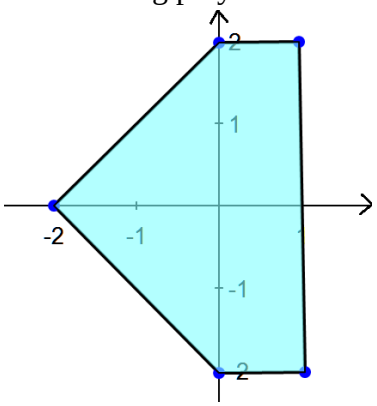
I affirm that I have completed this quiz independently, without collaboration or sharing of information with any other student.

Question # 2

Assume that $K \subset \mathbb{R}^n$. Prove that K is a convex cone if and only if it is closed under addition and positive scalar multiplication.

Question # 3

Define closed half space. Write the following polyhedral as intersection of closed half spaces.



Question # 4

Define polyhedral. Draw three polyhedral in $\mathbb{R}^2$ and two polyhedral in $\mathbb{R}^3$.