MATH 2568
homework #1

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Contents

1.1: Exercise 2

Let A be the 3×4 matrix

$$A = \begin{pmatrix} 2 & -1 & 0 & 1 \\ 3 & 4 & -7 & 10 \\ 6 & -3 & 4 & 2 \end{pmatrix}.$$

(a) For which n is a row of A a vector in $\mathbb{R}^n$?

(b) What is the 2^{nd} column of A?

(c) Let a_{ij} be the entry of A in the i^{th} row and the j^{th} column. What is $a_{23} - a_{31}$?

Solution: We have to take its complement and check whether that set is an open set, i.e., if it is a union of open balls.

(a)

$$n = 4.$$

(b)

$$\begin{bmatrix} -1 \\ 4 \\ -3 \end{bmatrix}$$

(c)

$$a_{23} - a_{31} = -13.$$