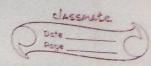
2027113019 Linear Algebra Assignment 4: -Ref: cuemath. com/calanta 1.  $\overline{\alpha} \oplus \overline{f} = \overline{\alpha} - \overline{p}$ ,  $c.\overline{\alpha} = -c\overline{\alpha}$ , defined on R $\overline{\alpha}$ ,  $\overline{\beta}$  have been defined once  $\overline{\beta}$ ,  $\overline{\alpha}$ ,  $\overline{\alpha}$ ) ρ=(aβ1, ··· , fn) Promy the axioms: - R is the field of scalars defined on anithmetic add in nuttiplient of commutativity:

(x1, --- xn) & (x1, --- xn)  $= (\alpha_1 - \beta_1, \dots, \alpha_n - \beta_n)$  $(p_1, \dots, p_n) \oplus (\alpha_1, \dots, \alpha_n)$ · ADF (1-an) :- commutativity does not hold. Desociativity:- $(\alpha_1, \dots, \alpha_n) \oplus (\beta_1, \dots, \beta_{\beta_n}) \oplus (\nu_1, \dots, \nu_n)$   $= (\alpha_1 - \beta_1, \dots, \alpha_n - \beta_n) \oplus (\nu_1, \dots, \nu_n)$  $(\alpha_1, \dots, \alpha_n) \oplus [(\beta_1, \dots, \beta_n) \oplus (v_1, \dots, v_n)]$  $(\alpha_1, \dots, \alpha_n) \oplus (\beta_1 - \nu_1, \beta_1 - \nu_n)$   $(\alpha_1 - \beta_1 + \nu_1, \alpha_n - \beta_n + \nu_n)$   $(\alpha_1 - \beta_1 + \nu_1, \alpha_n - \beta_n + \nu_n)$   $(\alpha_1 - \beta_1 + \nu_1, \alpha_n - \beta_n + \nu_n)$ Associativity does not hold commutativity does not hold, the def<sup>n</sup> of additure identity becomes  $\vec{\alpha} + \vec{0} = \vec{\alpha}$ ,  $\vec{0} + \vec{\alpha} = \vec{\alpha}$  $(\alpha_1, \dots, \alpha_n) \oplus (\alpha_1, \dots, \alpha_n) = (\alpha_1, \dots, \alpha_n)$ - Additure identity does not exist.

hannah Leksaria



@ Additive Enverse additive inverse in defined for additive identity, B Multiplicative identity:

11. (\alpha\_1, \alpha\_n) = (-\alpha\_1, \dots, -\alpha\_n) \text{Refinel}

Dees not half

Check it @ check if & Co.c. C. (C2 X) (49)(-1) is in become  $(c_1c_2)\alpha = (-c_1c_2\alpha_1, \dots, -c_1c_2\alpha_n)$ (c, (c2 a) = c, (-c2 a), - C2 an) (c, c, d), (c, c, x, c, c, x, x) Does not half. ( α⊕ β) = α⊕ (β ε. (α⊕β) = c. ((α, -, α, )⊕(β, ..., βη))  $=c(\alpha_1-\beta_1),\ldots,\alpha_n-\beta_n)$ (CB1-cx1), CPn-cxn) 11(110) + (1) cx ⊕ c, β = c(a,, i, an) ⊕ c(æ β, , ..., fn) = (-ca,, -- , -can) (-cf,, -cfn) = (cp,-cx, ---, @cg, -cx) CHS = RHS, wence thomas axiom holds: B(c,+c2)x = c1. x Dc2.x (C1+C2) x = (C1+C2 a1, (C+C2). xn) CARTA ( CIALLE ) · HAMB, CIN DC2. OF CCFI-CX Crat C2. a = (-c, a, ..., c2 an) D(-c2a, , ..., )-c2an) = (c2x1 - c1x1, ..., c2xn - C1xn) .. Axiom dell not hold Thus only one oxion holdi.

