

MATH 320: HOMEWORK 1

Due on Wednesday, September 4

Do problems 1.18, 1.22, 1.29, 2.18 and 3.14 in the assigned Hefferon textbook.

1) Sketch a graph of the planes P_1 and P_2 in \mathbb{R}^3 defined by:

$$P_1 := \{(x, y, z) \in \mathbb{R}^3 \mid 2x + 3y + z = 4\}$$

and

$$P_2 := \{(x, y, z) \in \mathbb{R}^3 \mid x + y - z = 2\}.$$

Find all points where the planes intersect.

2) Let S be a linear system of equations which has no free variables in row echelon form. Prove that S has at most one solution.