

Math 4550 Hints for Jan 27, 2009

1. To see if $A - x \subseteq A - y$, let $z = v - x$, let $v \in A$ and see if there is a $v' \in A$ such that $v' - y = z$. Problem #2 might come in handy.

2. To see that any affine combination $c_1x_1 + \cdots + c_kx_k$ is in the convex hull of X try induction on k .

3. Problem #4.

4.

$$\left\{ \begin{bmatrix} 1 \\ x_1 \end{bmatrix}, \dots, \begin{bmatrix} 1 \\ x_n \end{bmatrix} \right\}$$

is linearly dependent in \mathbb{R}^{d+1} if and only if.....

5. For Δ^1 one possibility is $x + y \leq 1, x + y \geq 1, x \geq 0$ and $y \geq 0$.

6. This is very similar to # 2.

7. The image of $L(X + v)$ is always.....