

Quiz 6(10 pts)
Math 220, Fall 2008
Thursday, May 1,2008

NAME:

SHOW YOUR WORK!

Problem 1. Let $A = \begin{pmatrix} 2 & 5 \\ -1 & 4 \end{pmatrix}$. Find matrices P and C where $C = \begin{pmatrix} a & -b \\ b & a \end{pmatrix}$ such that $A = PCP^{-1}$

Problem 2. Find the distance from a point with coordinates $(6, 4, 8, 10)$ to a line passing through the origin and point $(1, 0, 2, -1)$.

Problem 3. Find a distance between point $(3, 6, 1, -2)$ and a plane spanned by orthogonal vectors $(1, 1, 1, 1)$ and $(1, 0, -1, 0)$.

Problem 4. Use Gram-Schmidt procedure to find orthogonal basis of the space spanned by vectors $(1, 1, 1, 1)$, $(1, -1, 2, 2)$, $(3, 1, 4, 4)$, $(-4, 6, 3, 3)$