Chi Kit Ho
Homework #2

Problem #3.

$$g(\vec{w}) = a + \vec{b}^T\vec{w} + \vec{w}^T C\vec{w}$$
$$= a + \vec{b}^T\vec{w} + \frac{1}{\beta} I\, \vec{w}^T\vec{w}$$
$$= a + b^T\vec{w} + \frac{1}{\beta} I \|\vec{w}\|^2$$

$$g'(\vec{w}) = b + \frac{2}{\beta}\vec{w} = 0.$$

$$\vec{w} = \frac{-b\beta}{2}. \leftarrow \text{station ary point of } g.$$