6.15 The 2x2 Gram matrix corresponding to a positive-definite kernel function $k(x, x')$ is:

$$\mathbf{K} = \begin{bmatrix} k(x_1, x_1) & k(x_1, x_2) \\ k(x_2, x_1) & k(x_2, x_2) \end{bmatrix}$$

Since it is positive-definite, the determinant is greater than 0.

$$\implies k(x_1, x_1)\, k(x_2, x_2) - k(x_1, x_2)^2 > 0$$

$$\implies k(x_1, x_1)\, k(x_2, x_2) > k(x_1, x_2)^2$$