P. C. T. D. IV/1

Let \( R_1 = \mathbb{C}[x,y]/(x^3-y^2) \)
\[ R_2 = \mathbb{C}[x] \]

Consider the ring homomorphism
\[ R_1 \xrightarrow{\phi} R_2 \]
\[ x_1 \mapsto x^2 \]
\[ y_1 \mapsto x^3 \]

(A) Prove that this map is injective but not surjective

(B) Prove that the induced map on fields of fractions
\[ \frac{F_{R_1}}{F_{R_2}} \]
is an \( \alpha \).