Calculus Worksheet: Continuity of Functions(1)

1. Show that for function f defined by

$$f(x)=\begin{cases}\dfrac{x^3-x^2}{x^2} & if \quad x\neq 0\\ -1 & if \quad x=0\end{cases}$$

a) $f(0)$ is defined,

b) $\lim_{x\to 0} f(x)$ exists,

c) f is continuous at $x=0$