1.) If possible, choose $k$ so that the following function is continuous on any interval:

$$f(x) = \begin{cases} 
5x^3 - 10x^2 & \text{if } x \neq 2 \\
\frac{x}{2} & \text{if } x = 2.
\end{cases}$$

2.) Discuss the continuity (or discontinuity) of the following functions: