TeX code compiled with \documentclass{beamer} using the Amsterdam theme.

\begin{document} \begin{frame} Is the function $$f(x)=\left\{\begin{array}{ll} 2-x&\mbox{ if $x\leq 2$}\\ x^2-4x+4&\mbox{ if $x> 2$} \end{array}\right.$$ differentiable at 2? \end{frame} \begin{frame} Find all a and b such that the function $$g(x)=\left\{\begin{array}{ll} 2-x&\mbox{ if $x\leq 2$}\\ x^2+ax+b&\mbox{ if $x> 2$} \end{array}\right.$$ is differentiable for all x. \end{frame} \begin{frame} You are designing the first ascent and drop for a roller coaster. You want the slope of the ascent to be $.8$ and the slope of the drop to be -1.6. You will connect these two straight stretches by part of a parabola $$y=ax^2+bx+c$$ of width 100 units. \begin{enumerate}[a)] \item Certainly you don't want a sharp corner in your tracks at the points where the linear parts meet the parabola. This puts a condition on the tangent lines of the parabola -- what's the condition? \item Find a formula for the parabola. \end{enumerate} \end{frame} \begin{frame} If $f + g$ is differentiable at a, are f and g necessarily differentiable at a? \end{frame} \begin{frame} If $f'(a)$ exists, $\displaystyle\lim_{x\rightarrow a} f(x)$ \begin{itemize} \item[i)] must exist, but there is not enough information to determine it exactly. \item[ii)] equals $f(a)$. \item[iii)] equals $f'(a)$. \item[iv)] may not exist. \end{itemize} \end{frame} \begin{frame} A slow freight train chugs along a straight track. The distance it has traveled after ${\bf x}$ hours is given by a function $f(x)$. An engineer is walking along the top of the box cars at the rate of 3 miles per hour in the same direction as the train is moving. The speed of the man relative to the ground is \begin{itemize} \item[i)] $f(x) + 3$ \item[ii)] $f'(x) + 3$ \item[iii)] $f(x) - 3$ \item[iv)] $f'(x) - 3$ \end{itemize} \end{frame} \end{document}