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

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\begin{document} \begin{frame} \large You own a company producing iSquids, (the latest portable electronic
craze). Your big production limitation is a scarcity of Chip 187, produced by outside manufacturers. \vskip 5pt If
$f(x)$ is the profit your company will make if it gets $x$ Chip 187's and $g(x)$ is a function giving the number of
Chip 187's you can obtain for $x$ dollars, which of the following is of interest to you? \vskip 8pt \begin{columns}
\begin{column}{0.5\textwidth} \begin{itemize} \item[\bf (a)] $f\circ g$ \item[\bf (b)] $g\circ f$ \end{itemize}
\end{column} \begin{column}{0.5\textwidth} \begin{itemize} \item[\bf (c)] both \item[\bf (d)] neither
\end{itemize} \end{column} \end{columns} \end{frame} \begin{frame} \Large $$ f(x)=x+\frac{1}{x} \hskip 30pt
g(x)=\dfrac{x+8}{x+2} \hskip 30pt h(x)=\sqrt{x} $$ Express each function as an equation. \\ What is the domain
of each function? \vskip 10pt \begin{columns} \begin{column}{0.5\textwidth} $(f\circ g)(x)$ \vskip 30pt $g(f(x))$
\vskip 30pt $(g\circ g)(x)$ \end{column} \begin{column}{0.5\textwidth} $(h\circ f)(x)$ \vskip 30pt $(g\circ h)(x)$
\vskip 30pt $h(h(x))$ \end{column} \end{columns} \vskip 20pt \end{frame} \begin{frame} \large For each of the
following functions, first express it as a composition of 2 functions. Then find the derivatives. \vskip 15pt
\begin{columns} \begin{column}{0.5\textwidth} \begin{enumerate} \item[\bf a)] $F(x)=\sqrt[3]{1+5x}$ \vskip
30pt \item[\bf b)] $G(x)=(x^4+9x^2+3)^8$ \vskip 30pt \item[\bf c)] $F(t)=\sqrt[9]{1+\tan(t)}$ \end{enumerate}
\end{column} \begin{column}{0.5\textwidth} \begin{enumerate} \item[\bf d)] $H(x)=\cos(3^7+x^7)$ \vskip 30pt
\item[\bf e)] $G(x)=\left(\dfrac{x^2+8}{x^2-8}\right)^3$ \vskip 30pt \item[\bf f)] $S(z)=\sqrt{\dfrac{z-7}{z+7}}$
\end{enumerate} \end{column} \end{columns} \end{frame} \begin{frame} \large Find the derivatives. \vskip
15pt \begin{columns} \begin{column}{0.45\textwidth} \begin{enumerate} \item[\bf a)]
$y=\dfrac{r}{\sqrt{r^2+3}}$ \vskip 20pt \item[\bf b)] $y=x\sin\left(\dfrac{7}{x}\right)$ \vskip 20pt \item[\bf c)]
$f(t)=\sqrt{\dfrac{t}{t^2+1}}$ \vskip 20pt \item[\bf d)] $g(y)=\dfrac{(y-2)^6}{(y^2+4y)^9}$ \end{enumerate}
\end{column} \begin{column}{0.55\textwidth} \begin{enumerate} \item[\bf e)] $y=\sin(\tan(8x))$ \vskip 20pt
\item[\bf f)] $y=\cos(\cos(\cos(x)))$ \vskip 20pt \item[\bf g)] $y=(1+\sec(3\pi x+4\pi))^5$ \vskip 20pt \item[\bf h)]
$y=\sqrt{11x+ \sqrt{11x+ \sqrt{11x}}}$ \vskip 20pt \item[\bf i)] $y = [x + (x + \sin(2 x))^6]^7$
\end{enumerate} \end{column} \end{columns} \end{frame} \begin{frame} \large If $h(x) = \sqrt{7 + 6f(x)}$,
where \begin{center} $f(4) = 7$ and $f '(4) = 2$, \end{center} find $h'(4)$. \vskip 70pt Find the first and second
derivatives of $y=\sin\left(x^2\right)$. \end{frame} \begin{frame} \large If $f$ and $g$ are both differentiable and
$h=f\circ g$, $h^{\prime}(2)$ equals \vskip 20pt \begin{enumerate} \item $f^{\prime}(2)\circ g^{\prime}(2)$
\item $f^{\prime}(2)g^{\prime}(2)$ \item $f^{\prime}(g(2)) g^{\prime}(2)$ \item $f^{\prime}(g(x))
g^{\prime}(2)$ \end{enumerate} \end{frame} \end{document}
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