

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

```

\begin{document} \begin{frame} Verify that the function satisfies the Mean Value Theorem on the given interval.
Then find all numbers  $c$  which satisfy the conclusion of the Mean Value Theorem. \vskip 10pt \begin{itemize}
\item[\bf a)]  $f(x) = 3x^2 + 2x + 5$  on  $[-1, 1]$ . \vskip 10pt \item[\bf b)]  $g(x) = x^3 + x - 1$  on  $[0, 2]$ . \vskip 10pt
\item[\bf c)]  $h(x) = \frac{x}{x+2}$  on  $[1, 4]$ . \vskip 10pt \item[\bf d)]  $i(x) = (x-2)^{-2}$  on  $[1, 4]$ .
\end{itemize} \end{frame} \begin{frame} On a toll road a driver takes a time stamped toll-card from the starting
booth and drives directly to the end of the toll section. After paying the required toll, the driver is surprised to
receive a speeding ticket along with the toll receipt. Which of the following describes the situation? \vskip 5pt
\begin{itemize} \item[\bf a)] The booth attendant does not have enough information to prove that the driver was
speeding. \vskip 5pt \item[\bf b)] The booth attendant can prove that the driver was speeding during their trip.
\vskip 5pt \item[\bf c)] The driver will get a ticker for a lower speed than their actual maximum speed.
\end{itemize} \end{frame} \begin{frame} {\bf True or False} \vskip 5pt An athlete is running back and forth along
a straight path. She finishes her run at the place where she began. There must be at least one moment, other than
the end of the race, where she was at a complete stop. \end{frame} \begin{frame} Two runners start a race at the
same moment and finish in a tie. What must be true? \vskip 10pt \begin{itemize} \item[\bf a)] At some point during
the race the two runners were not tied. \vskip 5pt \item[\bf b)] The runners' speeds at the end of the race must
have been exactly the same. \vskip 5pt \item[\bf c)] The runners must have had the same speed at exactly the
same time at some point in the race. \vskip 5pt \item[\bf d)] The runners had to have the same speed at some
moment, but not necessarily at exactly the same time. \end{itemize} \end{frame} \begin{frame} Show that for all
values  $a$  and  $b$   $|\sin(a) - \sin(b)| \leq |a - b|$  \vskip 35pt Suppose that  $3 \leq f'(x) \leq 5$  for all values of  $x$ .
Show that  $18 \leq f(8) - f(2) \leq 30$  \vskip 35pt Show that the polynomial  $f(x) = 1 + 2x + x^3 + 4x^5$  has
exactly one real root. \end{frame} \end{document}

```

From:
<http://www2.math.binghamton.edu/> - Binghamton University Department of Mathematical Sciences

Permanent link:
http://www2.math.binghamton.edu/p/calculus/resources/calculus_flipped_resources/calculus/calculus_flipped_resources/calculus_flipped_resources/applications/3.2_mean_value_theorem_tex

Last update: 2015/08/29 03:12

