Presentation Input

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\documentclass[10pt]{beamer}

\usepackage[utf8]{inputenc}

%\usepackage{mathtools}

\usetheme{Madrid}

\definecolor{aggiemaroon}{RGB}{80,0,0}

\usecolortheme[named=aggiemaroon]{structure}

\useoutertheme{split}

\title[Mata Sundri College for Women, University of Delhi]{Document}

\author[Mehak]{{\Large \textrm Mehak}\\ \vspace{0.2cm} \large {College Roll no.- MAT/20/93\\ University Roll no.- 20044563018}}

\institute{{\includegraphics[scale=0.11]{Collegelogo.png}\\[0.4cm]

%\hspace{0.5cm} \includegraphics[scale=0.11]{Dulogo.png}\\[0.4cm]

{\large Mata Sundri College for Women, \\ University of Delhi}}}

\date{}

\usepackage{graphicx}

\begin{document}

\begin{frame}

    \titlepage

\end{frame}

\begin{frame}{Content of Page no. 69}
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\begin{block}{}
\begin{itemize}
\item Let $\mathbf{x}=(x_1,\ldots,x_n)$,
where the $x_i$ are non-negative real numbers.
Set
\[M_r(\mathbf{x}) = \left(\frac{x_1^r+x_2^r
+\cdots+x_n^r}{n}\right)^{1/r}, \   \ r \in \mathbb{R} \setminus \{0\}, \]
and
\[M_0(\mathbf{x})=\left( x_1 x_2 \ldots x_n \right)^{1/n}.\]
We call $M_r(\mathbf{x})$ the \emph{$r$th power mean} of $\mathbf{x}$.\\
Claim:
\[\lim_{r \rightarrow 0} M_r(\mathbf{x}) = M_0(\mathbf{x}).\]
\end{itemize}
\end{block}
\end{frame}
\begin{frame}{Content of Page no. 69}
\begin{block}{}
\begin{itemize}
\item Define
\[V_n=\left[\begin{array}{ccccc}
1 & 1 & 1 & \ldots & 1\\
x_1 & x_2 & x_3 & \ldots & x_n\\
x_1^2 & x_2^2 & x_3^2 & \ldots & x_n^2\\
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\vdots & \vdots & \vdots & \ddots & \vdots\\
x_1^{n-1} & x_2^{n-1} & x_3^{n-1} & \ldots & x_n^{n-1}
\end{array}\right].\]
We call $V_n$ the \emph{Vandermonde matrix} of order $n$.\\
Claim:
\[\det V_n = \prod_{1 \leq i < j \leq n}(x_j-x_i).\]
\end{itemize}
\end{block}
\end{frame}
\begin{frame}{Question 4}
\begin{block}{}
\begin{itemize}
   \item $$3^3 + 4^3 + 5^3 = 6^3$$
   \item $$\sqrt{100} = 10 $$
   \item $$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$
   \item $$\sum_{k=1}^n k = \frac{n(n+1)}{2}$$
   \item $$\frac{\pi}{4} = \frac{1}{1}-\frac{1}{3}+\frac{1}{5}-
\frac{1}{7}+\frac{1}{9}-\frac{1}{11}+\cdots$$
\end{itemize}
\end{block}
\end{frame}
\begin{frame}{Remaining parts of Question 4}
\begin{block}{}
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\begin{itemize}

\item $$cos\theta = sin(90^{{\circ}} - \theta)$$

\item $$e^{\iota \theta} = cos\theta + \iota sin\theta$$

\item $$\lim_{\theta \rightarrow 0} \frac{sin\theta}{\theta} = 1$$

\item $$\lim_{x \rightarrow \infty}\frac{\pi(x)}{{x/ \log{x}}} = 1$$

\item $$\int_{-\infty}^{\infty} e^{-x^2}dx = \sqrt{\pi}$$

\end{itemize}

\end{block}

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\begin{frame}{Question 5}

\begin{block}{}

\begin{itemize}

\item Positive numbers $a$, $b$, and $c$ are the side lengths of a triangle if and only if $a+b > c$, $b+c > a$, and $c+a > b$.

\item The area of a triangle with side lengths $a$, $b$, $c$ is given by $Heron's \ \ formula:$\\

$$A = \sqrt{s(s-a)(s-b)(s-c)}, $$\\

where $s$ is the semiperimeter ${(a+b+c)/2}$.

\item The volume of a regular tetrahedron of edge length $1$ is $\sqrt2/12$.

\item The quadratic equation $ax^2 + bx + c = 0$ has roots $$r_1,r_2 = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$.

\end{itemize}

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\begin{frame}{Remaining Parts of Question 5}

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\begin{itemize}

\item The derivative of a function f, denoted f', is defined by $$f'(x) = \lim_{h \rightarrow o}\frac{f(x+h)-f(x)}{h}$$.

\item A real-valued function f is \emph{convex} on a interval I if $$f(\lambda x + (1 - \lambda)y) \leq \lambda f(x) + (1 - \lambda)f(y),$$ for all $a,y \in I$ and $0 \leq \lambda \leq 1$.

\end{itemize}

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\begin{frame}{Remaining Parts of Question 5}

\begin{block}{}

\begin{itemize}

\item The general solution to the differential equation $$ y'' - 3y' + 2y = 0$$ is $$y = C_1e^x + C_2e^{2x}.$$

\item The $Fermat \ number \ F_n$ is defined as $$f_n = 2^{2^n}, \ \ \ n\geq 0.$$

\end{itemize}

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\begin{frame}{Question 6}

\begin{block}{}

\begin{itemize}

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    \item $$\frac{d}{dx}\left(\frac{x}{x+1}\right) = \frac{1}{(x+1)^2}$$
    \item $$\lim_{n \rightarrow \infty}\left(1+\frac{1}{n}\right)^n = e$$
    \item $$\left| \begin{array}{cc}
a & b \\
c & d
\end{array}\right| = ad - bc$$
     \item $$R_\theta = \left[\begin{array}{cc}
cos\theta & -sin \theta \\
sin \theta & cos \theta
\end{array}\right]$$
\end{itemize}
\end{block}
\end{frame}
\begin{frame}{Remaining Parts of Question 6}
\begin{block}{}
\begin{itemize}
    \item $$\left| \begin{array}{ccc}
\textbf{i} & \textbf{j} & \textbf{k} \\
a_1 & a_2 & a_3 \\
b_1 & b_2 & b_3
\end{array}\right| = \left|\begin{array}{cc}
a_2 & a_3\\
b_2 & b_3
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\end{array}\right|\textbf{i} - \left|\begin{array}{cc}
a_1 & a_3\\
b_1 & b_3
\end{array}\right|\textbf{j} + \left|\begin{array}{cc}
a_1 & a_2\\
b_1 & b_2
\end{array}\right|\textbf{k}$$
    \item $$\left[\begin{array}{cc}
a_{11} & a_{12}\\
a_{21} & a_{22}
\end{array}\right]\left[\begin{array}{cc}
b_{11} & b_{12}\\
b_{21} & b_{22}
\end{array}\right] = \left[\begin{array}{cc}
a_{11}b_{11} + a_{12}b_{21} & a_{11}b_{12} + a_{12}b_{22}\\
a_{21}b_{11} + a_{22}b_{21} & a_{21}b_{12} + a_{22}b_{22}
\end{array}\right]$$
   \item $$f(x) = \left\{\begin{array}{cc}
   -x^2 ,&  x < 0\\
   x^2 ,& 0\leq x \geq 2\\
   4 ,& x > 2
\end{array}\right.$$
\end{itemize}
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\end{block}
\end{frame}
\begin{frame}{Question 7}
\begin{block}{}
\begin{itemize}
  \item $$\begin{array}{rcl}
  1 + 2 & = & 3 \\[0.4cm]
 4 + 5 + 6 & = & 7 + 8\\[0.4cm]
 9 + 10 + 11 + 12 & = & 13 + 14 + 15\\[0.4cm]
16 + 17 + 18 + 19 + 20 & = & 21 + 22 + 23 + 24\\[0.4cm]
  25 + 26 + 27 + 28 + 29 + 30 & = & 31 + 32 + 33 + 34 + 35
  \end{array}$$
\end{itemize}
\end{block}
\end{frame}
\begin{frame}{Remaining Parts of Question 7}
\begin{block}{}
\begin{itemize}
  \item $$\begin{array}{lll}
  (a+b)^2 & = & (a + b)(a + b)\\[0.4cm]
      & = & (a + b)a + (a+b)b\\[0.4cm]
      & = & a(a + b) + b(a + b)\\[0.4cm]
      & = & a^2 + ab + ba + b^2\\[0.4cm]
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& = & a^2 + ab + ab + b^2\\[0.4cm]
& = & a^2 + 2ab + b^2
\end{array}$$
\end{itemize}
\end{block}
\end{frame}
\begin{frame}{Remaining Parts of Question 7}
\begin{block}{}
\begin{itemize}
  \item $$\begin{array}{lll}
 tan(\alpha + \beta + \gamma) & = & \frac{tan(\alpha + \beta) + tan\gamma}{1 - tan(\alpha + \beta)tan\gamma} \\[0.4cm]
 & = & \frac{\frac{tan\alpha + tan\beta}{1 - tan\alpha tan\beta} + tan\gamma}{1 - \left(\frac{tan\alpha + tan\beta}{1 - tan\alpha tan\beta}\right)tan\gamma} \\[0.4cm]
 & = & \frac{tan\alpha + tan\beta + (1 - tan\alpha tan\beta)tan\gamma}{1 - tan\alpha tan\beta - (tan\alpha + tan\beta)tan\gamma} \\[0.4cm]
 & = & \frac{tan\alpha + tan\beta + tan\gamma - tan\alpha tan\beta tan\gamma}{1 - tan\alpha tan\beta - tan\alpha tan\gamma - tan\beta tan\gamma} \\[0.4cm]
\end{array}$$
\end{itemize}
\end{block}
\end{frame}
\begin{frame}{Remaining Parts of Question 7}
\begin{block}{}
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```latex
\begin{eqnarray*}

\bullet \hspace{3cm}

   \prod_{p} \left( 1 - \frac{1}{p^2}\right) & = & \prod_{p} \frac{1}{1 + \frac{1}{p^2} + \frac{1}{p^4} + \cdots }\\[0.4cm]

   & = & {\left( \prod_{p} \left( \frac{1}{1 + \frac{1}{p^2} + \frac{1}{p^4} + \cdots }\right) \right)}^{-1}\\[0.4cm]

         & = & {\left( 1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \cdots \right)}^{-1}\\[0.4cm]

         & = & \frac{6}{\pi^2}

\end{eqnarray*}

\end{block}

\end{frame}

\begin{frame}{Thank you}


{\includegraphics[scale=0.5]{Thank you.jpg}}

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