Beamer 1

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main.tex

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\documentclass{beamer}
\usepackage[utf8]{inputenc}
\usetheme{Antibes}
\usecolortheme{spruce}
\usepackage{xcolor}
\usepackage{graphics}


\title{ASSIGNMENT - 2}

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\date{}
\begin{document}
\begin{frame}
\titlepage
\end{frame}
\begin{frame}{Example 95: Part 1}
1. Let x=$(x_1,x_2,\dots,x_n)$ where the $,x_i$ are non negative real numbers. Set
$$M_r(x)=\left(\frac{(x_1^r+x_2^r+\dots +x_n^r)}{n}\right)^\frac{1}{r},r \in \mathbf{R}
\backslash\{0\}, $$ and
$$ M_0(x)={(x_1x_2\dots x_n)}^\frac{1}{n}$$\\
We call $M_r(x)$ the rth power mean of $x$.\\
Claim: $$\lim_{r\rightarrow \infty}M_r(x)=M_0(x)$$
\end{frame}

\begin{frame}{Part 2}
\item 2. 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 \\
  \vdots&\vdots &\vdots&\ddots& \vdots \\
  x_1^{n-}1 & x_2^{n-1} & x_3^{n-1}  &\dots & 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{frame}
\begin{frame}{Q4 Make the following equations. Part 1}
\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 $$\frac{\pi}{4} &= &\frac{1}{1}-\frac{1}{3}+\frac{1}{5}-\frac{1}{7}+\dots$$

\end{itemize}
\end{frame}
\begin{frame}{Part 2}
\begin{itemize}
\item $$cos\theta=sin(90^\circ-\theta)$$\\
\item $$e^i^\theta & =& cos\theta+isin\theta$$
\item $$\lim_{\theta\rightarrow 0}\frac{sin\theta}{\theta}=1$$
\item $$\lim_{x\rightarrow\infty}\frac{\pi(x)}{x/log x}=1$$
\item $$\int_{-\infty}^{\infty}e^-x^2dx=\sqrt{x}$$
  \end{itemize}
\end{frame}
\begin{frame}{Q5. Typeset the following sentences}
\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 \emph{Heron's formula}:
    $$A=\sqrt{s(s-a)(s-b)(s-c)}$$ Where, $s$ is the semi-perimeter $(a+b+c)/2$
    \item The volume of a regular tetrahedron of edge length 1 is $\sqrt{2}/12$.
    \item The quadratic equation $ax^2+bx+c=0$ had roots $$r1,r2= \frac{-b\pm
    \sqrt{b^2-4ac}}{2a}$$
\end{itemize}
\end{frame}
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\end{frame}
\begin{frame}{Remaining parts of Q5}
 \begin{itemize}
     \item The \emph{derivative} of a function $f$, denoted $f'$, defined by $$f'(x)=
     \lim_{h\rightarrow 0}\frac{f(x+h)-f(x)}{h}$$
     \item A real- valued function $f$ is \emph{convex} on interval $I$ if $$f(\lambda
     x+(1-\lambda)y)\leq \lambda f(x)+(1-\lambda)f(y)$$ for all $x,y\in I$ and $0\leq \lambda
     \leq1$.
     \item The general solution to the differential equation $$y"-3y'+2y=0$$ is
     $$y=C_1e^x+C_2e^2^x$$
 \end{itemize}
\end{frame}
\begin{frame}{Make the following equations. Notice the large delimiters.}
 \begin{itemize}
     \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 \[ R_\theta=\left[
    \begin{array}{cc}
      cos\theta  & -sin\theta \\
        sin\theta & cos\theta
    \end{array}
\right]\]
\item \[\left|
\begin{array}{ccc}
     \mathbf{i}& j&k \\
    a_1 & a_2&a_3\\
    b_1&b_2&b_3
\end{array}
\right|=\left|
\begin{array}{cc}
    a_2 & a_3 \\
    b_2 & b_3
\end{array}
\right|i-\left|
\begin{array}{cc}
    a_1 &a_3  \\
    b_1 & b_3
\end{array}
\right|j+\left|
\begin{array}{cc}
    a_1 &a_2  \\
     b_1& b_2
\end{array}
\right|k\]
 \end{itemize}
\end{frame}
\begin{frame}{Remaining parts of Q6}
 \begin{itemize}
     \item\[\left[
     \begin{array}{cc}
        a_1_1  & a_1_2 \\
        a_2_1  & a_2_2
     \end{array}
 \right]\left[
 \begin{array}{cc}
     b_1_1 & b_1_2 \\
      b_2_1& b_2_2
 \end{array}
\right]=\left[
 \begin{array}{cc}
 a_1_1b_1_1+a_1_2b_2_1  &a_1_1b_1_2+a_1_2b_2_2\\
 a_2_2b_1_1+a_2_2b_2_1 & a_2_1b_1_2+a_2_2b_2_2
 \end{array}\right]\]
 \item \[f(x)=\begin{cases} -x^2,& x < 0\\ x^2,& 0\leq x \leq 2\\ 4,& x > 2
 \end{cases}\]
 \end{itemize}
\end{frame}
 \begin{frame}{Q7 Make the following multi-line equations}
    \begin{eqnarray*}
     1+2 & = & 3\\
     4+5+6 & = & 7+8\\
     9+10+11+12 & = & 13+14+15\\
     16+17+18+19+20 & = & 21+22+23+24\\
      25+26+27+28+29+30 & = & 31+32+33+34+35
 \end{eqnarray*}
 \end{frame}
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\begin{frame}{Remaining parts of Q7}
 \begin{eqnarray*}\\
 (a+b)^2 & = & (a+b)(a+b)\\
         & = & (a+b)a+(a+b)b\\
         & = & a(a+b)+b(a+b)\\
         & = & a^2+ab+ba+b^2\\
         & = & a^2+ab+ab+b^2\\
         & = & a^2+2ab+b^2
 \end{eqnarray*}
\end{frame}
\begin{frame}{Remaining Parts of Q7}
  \begin{eqnarray*}
  tan\left(\alpha+\beta+\gamma\right) & = &
  \frac{tan\left(\alpha+\beta\right)+tan\gamma}{1-tan\left(\alpha+\beta\right)tan\gamma}\\
  & = &\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}\\
  & = & \frac{tan\alpha+tan\beta+\left(1-tan\alpha tan\beta\right)tan\gamma}{1-tan\alpha
  tan\beta-\left(tan\alpha+tan\beta\right)tan\gamma}\\
  & = & \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\gamm}
  \end{eqnarray*}
\end{frame}
\begin{frame}{Remaining Parts of Q7}
  \begin{eqnarray*}
    & = &  \prod_{p}\left(1-\frac{1}{p^2}\right)=\prod_{p}\frac{1}{1+\frac{1}{p^2}+\frac{1}{p^4}+\
    hdots}\\
     & = & \left(\prod_{p}\left(1+\frac{1}{p^2}+\frac{1}{p^4}+\hdots\right)\right)\\
     & = & \left(\prod_{p}\left(1+\frac{1}{p^2}+\frac{1}{p^4}+\hdots\right)\right)^{-1}\\
     & = & \left(1+\frac{1}{2^2}+\frac{1}{3^2}+\frac{1}{4^2}+\hdots\right)^{-1}\\
     & = & \frac{6}{\pi^2}
  \end{eqnarray*}
\end{frame}
\includegraphics[width=10.5cm, height=7cm]{IMG-20211024-WA0001.jpg}
\end{document}
```