Assignment 2

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\documentclass[11pt]{beamer}
\usepackage[utf8]{inputenc}
\usepackage{graphicx}
%\author{saraswatsheetal1408 }
\date{}
\usetheme{Copenhagen}
\usepackage{xcolor}
\usepackage{shadowtext}
\begin{document}
{\usebackgroundtemplate{\includegraphics[width=\paperwidth,height=\paperheight]{background_73601176_468_3 (1) (2).jpg}}
\begin{frame}{}
\begin{center}
\huge{\shadowtext{\textcolor{red} {Mata Sundri College for Women}}}\\
\huge{\shadowtext{\textcolor{red} {Delhi University}}}
\end{center}
\begin{center}
\Large{\textcolor{blue}{{Name = Sheetal Saraswat}\\ {College Roll no.= MAT $\backslash 20 \backslash 124$}\\ {University Roll no. = 20044563048 }}}
\end{center}
\end{frame}}
%\maketitle
\begin{frame}{Pg 69 of Donald Book}
\begin{block}{}
1. Let x = ($x_1 +\ldots+x_n$),where the $x_i$ are nonnegative real numbers. Set  \vspace{0.2 cm}\\
\[M_r(X)=\left(\frac{x^r_1+x^r_2+\cdots+x^r_n}{n}\right)^{1/r} , r\in R  \setminus \{ 0 \} ,\]


and\[M_o(x)=(x_1x_2\ldots x_n)^{1/n}\]
We call $M_r(x)$ the rth power  mean of x.\\
Claim :
\[\lim_{r->0} M_r(x) = M_0(x)\]
\end{block}
\end{frame}
\begin{frame}{}
\begin{exampleblock}{}
Define\[V_n = \left[\begin{array}{ccccc}
1&1&1&\ldots &1\\
x_1&x_2&x_3&\ldots &x_n\\
x_1^2&x_2^2&x_3^2&\ldots &x_n^2\\
\vdots&\vdots&\vdots&\ddots&\vdots\\
x_1^{n-1}&x_2^{n-1}&x_3^{n-1}&\ldots&x_n^{n-1}
\end{array}\right]\]
We call $V_n$ the Vandermonde matrix of order n.\\
Claim :\\
$$det V_n =\prod_{1\le i < j\le n}(x_j-x_i).$$
\end{exampleblock}
\end{frame}
\begin{frame}{Question 4}
\begin{alertblock}{Make the following equations}
\[ {3^3+4^3+5^3=6^3}\]
\[ {\sqrt{100}=10}\]
\[(a+b)^3 = a^3 + 3a^2b + 3ab^2 +b^3\]
\[\sum_{k=1}^n k = \frac{n(n+1)}{2}\]
\[\frac{\pi}{4} =\frac{1}{1}-\frac{1}{3}+\frac{1}{5}-\frac{1}{7}+\frac{1}{9}-\frac{1}{11}+\cdots\]
\end{alertblock}
\end{frame}
\begin{frame}{Remaining parts of Question 4}
\begin{block}{}
\begin{itemize}
\item $$\cos{\theta }= \sin(90^o - {\theta})$$
\item \[e^{i\theta} = \cos{\theta} +i \sin{\theta} \]
\item \[\lim_{\theta->0}\frac{\sin{\theta}}{\theta} = 1\]
\item {\[\lim_{x->\infty}\frac{\pi(x)}{x/ {\log x}} = 1\]
\[\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}\]}
\end{itemize}
\end{block}
\end{frame}

\begin{frame}{Question 5}
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\begin{frame}{Question 5}
\begin{block}{Typeset the following sentences}

 Positive numbers $a$,$b$ and $c$ are the side lengths of a triangle if and only if $a+b > c, b+c > a, and  c+a > b.$
 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 $( a+b+c )/ 2.$
The volume of a regular tetrahedron of edge length 1 is $\sqrt{2}/ 12.$
 The quadratic equation $ax^2 +bx +c = 0 $ has roots.

\end{block}
\end{frame}

\begin{frame}{Remaining parts of Question 5}
\begin{exampleblock}{}
\[r_1,r_2 = \frac{-b \pm \sqrt{b^2-4ac}}{2a}\]
The derivative of a function $f$ ,denoted $f'$ ,is defined by
\[f'(x) = \lim_{h->0}\frac{f(x+h)-f(x)}{h}\]
A real-valued function $f$ is convex on an interval $I$ if
\[f(\lambda x + (1-\lambda)y) \le \lambda f(x) + (1-\lambda) f(y),\]
for all $x$ ,$y$ $\in$ $I$ and  $0\le \lambda \le 1$.
\end{exampleblock}
\end{frame}
\begin{frame}{Remaining parts of Question 5}
    \begin{block}

The general solution to the differential equation
\[y" -3y' +2y = 0\]
is
\[y = C_1e^x +C_2e^{2x}.\]
The Fermat number $F_n$ is defined as
\[F_n = 2^{2^n }, n \ge 0\]
\end{block}
\end{frame}
\begin{frame}{Question 6}
\begin{alertblock}{Make the following equations . Notice the large delimiters.}
  \[\frac{d}{dx}\left(\frac{x}{x+1}\right) = \frac{1}{(x+1)^2} \]
  \[\lim_{n->\infty}\left(1+\frac{1}{n}\right)^n = e\]
  \[\left|\begin{array}{cc}
  a&b\\
  c&d
  \end{array}\right| = ad - bc\]
  \[R_{\theta} = \left[\begin{array}{cc}
  \cos \theta&-\sin \theta\\
  \sin \theta&  \cos\theta
  \end{array}\right]\]
  \end{alertblock}
  \end{frame}
  \begin{frame}{Remaining parts of Question 6}
  \begin{block}{}
 \[\left|\begin{array}{ccc}
\textbf{i}&\textbf{j}&\textbf{k}\\
 a_1&a_2&a_3\\
 b_1&b_2&b_3
 \end{array}\right| = \left|\begin{array}{cc}
 a_2&a_3\\
 b_2&b_3\end{array}\right|\textbf{i}- \left|\begin{array}{cc}
 a_1&a_3\\
 b_1&b_3 \end{array}\right|\textbf{j}+\left|\begin{array}{cc}
 a_1&a_2\\
b_1&b_2\end{array}\right|\textbf{k}\]
\[\left[\begin{array}{cc}
a_{11}&a_{12}\\
a_{21}&a_{22}
\end{array}\right]
\left[\begin{array}{cc}
b_{11}&b_{12}\\
b_{21}&b_{22}
\end{array}\right] = \left[\begin{array}{cc}
a_{11}b_{11}+a_{12}b_{21}&a_{11}b_{12}+a_{12}b_{22}\\
a_{21}b_{11}+a_{22}b_{21}&a_{21}b_{12}+a_{22}b_{22}
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\end{array}\right]\]
$$ f(x) = \begin{cases} -x^2 , x<0 \\ x^2 , 0\le x\le 2\\4 , x >2\end{cases} $$
\end{block}
\end{frame}
\begin{frame}{Question 7}
\begin{exampleblock}{Make the following multi-line equations.}
    \[1+2 = 3\]
    \[4+5+6 = 7+8\]
    \[9+10+11+12 = 13+14+15\]
   \[ 16+17+18+19+20 = 21+22+23+24\]
   \[ 25+26+27+28+29+30 = 31+32+33+34+35\]
   \end{exampleblock}
   \end{frame}
   \begin{frame}{Remaning parts of Question 7}
   \begin{alertblock}{}
   \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{alertblock}
\end{frame}
\begin{frame}{Remaining parts of Question 7}
\begin{block}{}
 \begin{eqnarray*}
 \tan(\alpha +\beta +\gamma)& = & \frac{\tan(\alpha +\beta) + \tan {\gamma}}{1 - \tan(\alpha
 +\beta) \tan {\gamma}}\\
 & = &\frac{\frac{\tan{\alpha} +\tan{\beta}}{1-\tan{\alpha}\tan{\beta}}+ \tan{\gamma}}{1 -
 (\frac{\tan{\alpha}+\tan{\beta}}{1-\tan{\alpha}\tan{\beta}})\tan{\gamma}}\\
& = &\frac{\tan{\alpha}+\tan{\beta}+(1-\tan{\alpha}\tan{\beta})\tan{\gamma}}{1-\tan{\alpha}\tan{\b
eta}-(\tan{\alpha}+\tan{\beta})\tan{\gamma}}\\
& = &\frac{\tan{\alpha}+\tan{\beta}+\tan{\gamma}-\tan{\alpha}\tan{\beta}\tan{\gamma}}{1-\tan{\alph
a}\tan{\beta}-\tan{\alpha}\tan{\gamma}-\tan{\beta}\tan{\gamma}}
 \end{eqnarray*}
 \end{block}
\end{frame}
\begin{frame}{Remaining parts of Question 7}
\begin{exampleblock}{}
\begin{eqnarray*}
 \prod_{p}(1-\frac{1}{p^2}) & =& \prod_{p}\frac{1}{1+\frac{1}{p^2}+\frac{1}{p^4}+\cdots} \\
 & = &\left(\prod_{p}\left(1+\frac{1}{p^2}+\frac{1}{p^4}+\cdots\right)\right)^{-1}\\
  & = &\left(1+\frac{1}{2^2}+\frac{1}{3^2}+\frac{1}{4^2}+\cdots\right)^{-1}\\
 & =& \frac{6}{\pi^2}
 \end{eqnarray*}
  \end{exampleblock}
\end{frame}
\begin{frame}{}
\includegraphics[width=\paperwidth,height=\paperheight]{thank-you-lettering-with-curls_1262-6964-1
.jpg}
\end{frame}
\end{document}
\section{Introduction}
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