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1 \documentclass{beamer}
2 \usepackage[utf8]{inputenc}
3 \usepackage{graphicx}
4 \usepackage{xcolor}
5 \usetheme{Madrid}
6 \useoutertheme{miniframes} % Alternatively: miniframes, infolines, split
7 \useinnertheme{circles}
8
9 \definecolor{UBCblue}{rgb}{0.04706, 0.13725, 0.26667} % UBC Blue (primary)
10
11 \usecolortheme[named=UBCblue]{structure}
12 \title{Assignment 2}
13 \author{\huge{Komal Sharma}}
14 \institute{\large{Mata Sundri College For Women\\Delhi Unoversity}}
15 \date{}
16 \usetheme{Berlin}
17 \begin{document}
18 \begin{frame}{Introduction}
19 \begin{center}
20 \color{red!50!blue}{\titlepage{Bsc(Hons.Mathematics)}}\\
21 {\color{red!50!blue}{College Roll No. - MAT/20/119}}\\
22 University Roll No. - 20044563043}\\
23 \end{center}
24 \end{frame}
25 \begin{frame}{Starting of Questions}
26 \begin{block}{Example 9.5}
27 \huge \centering {My document\\
28 A Student\\
29 January 1, 2011}
30 \end{block}
31
32 \end{frame}
33 \begin{frame}{Example 9.5}
34 \begin{enumerate}
35 \item Let  $\mathbf{x}=(x_1,\dots,x_n)$ ,
36 where the  $x_i$  are non negative real numbers .\\
37 Set
38 
$$M_r(x)=\left(\frac{x_1^r+x_2^r+\cdots+x_n^r}{n}\right)^{\frac{1}{r}},\,; r$$

39 
$$\text{in } \mathbf{R} \text{ setminus } \{0\},$$

40 and  $[M_0(\mathbf{x})]=\left(x_1 x_2 \cdots x_n\right)^{1/n}$ \\
41 we call  $M_r(\mathbf{x})$  the  $r$ th power mean of  $\mathbf{x}$ .\\
42 Claim:  $\lim_{r \rightarrow 0} M_r(\mathbf{x})=M_0(\mathbf{x})$ \\
43 \end{enumerate}
44 \end{frame}
45
46 \begin{frame}{Ind part of 9.5}
47 \begin{enumerate}
48 \item Define  $V_n=\begin{bmatrix} 1 & 1 & 1 & \cdots & 1 \\ x_1 & x_2 & x_3 & \cdots & x_n \\ x_1^2 & x_2^2 & x_3^2 & \cdots & x_n^2 \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ x_1^{n-1} & x_2^{n-1} & x_3^{n-1} & \cdots & x_n^{n-1} \end{bmatrix}$ 
49 We call  $V_n$  the Vandermonde matrix of order  $n$ .\\
50 Claim:  $\det V_n = \prod_{1 \leq i < j \leq n} (x_j - x_i)$ 
51 \end{enumerate}
52 \end{frame}
53 \begin{frame}{Question number 4}

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30 \end{block}
31
32 \end{frame}
33 \begin{frame}{Example 9.5}
34 \begin{enumerate}
35 \item Let  $\mathbf{x}=(x_1,\dots,x_n)$ ,
36 where the  $x_i$  are non negative real numbers .\\
37 Set
38  $M_r(x)=\left(\frac{x_1^r+x_2^r+\cdots+x_n^r}{n}\right)^{\frac{1}{r}}$ ;  $r \in \mathbb{R}$   $\setminus \{0\}$ ,\\
39 and  $M_0(\mathbf{x})=\left(x_1 x_2 \cdots x_n\right)^{1/n}$ \\
40 we call  $M_r(\mathbf{x})$  the  $r$ th power mean of  $\mathbf{x}$ .\\
41 Claim:  $\lim_{r \rightarrow 0} M_r(\mathbf{x}) = M_0(\mathbf{x})$ 
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43 \end{enumerate}
44 \end{frame}
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48 \item Define  $V_n=\begin{bmatrix} 1 & 1 & 1 & \cdots & 1 \\ x_1 & x_2 & x_3 & \cdots & x_n \\ x_1^2 & x_2^2 & x_3^2 & \cdots & x_n^2 \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ x_1^{n-1} & x_2^{n-1} & x_3^{n-1} & \cdots & x_n^{n-1} \end{bmatrix}$ 
49
50
51
52
53 \end{array}
54 We call  $V_n$  the Vandermonde matrix of order  $n$ .\\
55 Claim:  $\det V_n = \prod_{1 \leq i < j \leq n} (x_j - x_i)$ .
56
57 \end{enumerate}
58 \end{frame}
59 \begin{frame}{Question number 4}
60 \begin{block}{}
61 \begin{itemize}
62 \item  $3^3+4^3+5^3=6^3$ 
63 \item  $\sqrt{100}=10$ 
64 \item  $(a+b)^3=a^3+3a^2b+3ab^2+b^3$ 
65 \item  $\sum_{k=1}^n k = \frac{n(n+1)}{2}$ 
66 \item  $\frac{\pi}{4} = \frac{1}{1} - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \cdots$ 
67 \end{itemize}
68 \end{block}
69 \end{frame}
70 \begin{frame}{Ind part of 4}
71 \begin{block}{}
72 \begin{itemize}
73 \item  $\cos \theta = \sin (90-\theta)$ 
74 \item  $e^{i \theta} = \cos \theta + i \sin \theta$ 
75 \item  $\lim_{\theta \rightarrow 0} \frac{\sin \theta}{\theta} = 1$ 
76 \item  $\lim_{x \rightarrow \infty} \frac{\pi(x)}{x / \log x} = 1$ 
77 \item  $\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}$ 
78 \end{itemize}
79 \end{block}
80 \end{frame}
81 \begin{frame}{Question number 5}
82 \begin{block}{}
83 \begin{itemize}
84 \item Positive numbers  $a, b$ , and  $c$  are the side lengths of a triangle if and only of  $a+b > c$ ,  $b+c > a$ , and  $c+a > b$ .
85 \item The area of triangle with side lengths  $a, b, c$  is given by Heron's formula:
86  $A = \sqrt{s(s-a)(s-b)(s-c)}$ ,

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