

Source Rich Text

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1 \documentclass{beamer}
2 \usepackage[utf8]{inputenc}
3 \usepackage{gensymb}
4 \usepackage{xcolor}
5 \usepackage{graphicx}
6
7 \title{\huge\emph{\textcolor{white}{MATA SUNDRI COLLEGE FOR WOMEN\DELHI UNIVERSITY}}}
8 \author{\Large\emph{\textcolor{white}{Name-Bipasha\Roll Number- MAT/20/82\University Roll
no.-20044563010}}}
9 \date{}
10 \setbeamertheme{background}{\includegraphics[width=\paperwidth,height=\paperheight]{aUMU7c.jpg}}
11 \begin{document}
12 \maketitle
13 \begin{frame}{\textcolor{white}{QUES ON PAGE 69}}
14 1) Let  $x=(x_1,x_2,\dots,x_n)$  where the  $x_i$  are non negative real numbers. Set
 $M_r(x)=\left(\frac{(x_1^r+x_2^r+\dots+x_n^r)}{n}\right)^{\frac{1}{r}},r\in\mathbb{R}\setminus\{0\}$ ,
15 and
16  $[M_0(x)=(x_1x_2\dots x_n)^{\frac{1}{n}}]$ 
17 We call  $M_r(x)$  the rth power mean of  $x$ .
18 Claim:
19  $\lim_{r\rightarrow 0}M_r(x)=M_0(x)$ 
20 \end{frame}
21
22 \begin{frame}{\textcolor{white}{QUES ON PAGE 69}}
23 2) Define:
24  $v_n=\left[\begin{array}{c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \end{array}\right]$ 
25  $1&1&1&\dots&1$ 
26  $x_1&x_2&x_3&\dots&x_n$ 
27  $x_1^2&x_2^2&x_3^2&\dots&x_n^2$ 
28  $\vdots&\vdots&\vdots&\ddots&\vdots$ 
29  $x_1^{n-1}&x_2^{n-1}&x_3^{n-1}&\dots&x_n^{n-1}$ 
30 \end{array}\right]
31
32 \end{frame}
33
34 \begin{frame}{\textcolor{white}{4. Make the following equations.}}
35 \begin{itemize}
36 \item  $3^3+4^3+5^3=6^3$ 
37 \item  $\sqrt{100}=10$ 
38 \item  $(a+b)^3=a^3+3a^2b+3ab^2+b^3$ 
39 \item  $\sum_{k=1}^n k=\frac{n(n+1)}{2}$ 
40 \item  $\frac{d}{dx}\pi^4=\frac{1}{1}-\frac{1}{3}+\frac{1}{5}-\frac{1}{7}+\dots$ 
41
42 \end{itemize}
43
44 \end{frame}
45 \begin{frame}{\textcolor{white}{4. Make the following equations.}}
46 \begin{itemize}
47 \item  $\cos\theta=\sin(90^\circ-\theta)$ 
48 \item  $e^{i\theta}=\cos\theta+i\sin\theta$ 
49 \item  $\lim_{\theta\rightarrow 0}\frac{\sin\theta}{\theta}=1$ 
50 \item  $\lim_{x\rightarrow \infty}\frac{\pi(x)}{x\log x}=1$ 
51 \item  $\int_{-\infty}^{\infty} e^{-x^2}dx=\sqrt{\pi}$ 
52 \end{itemize}
53 \end{frame}
54
55 \begin{frame}{\textcolor{white}{5. Typeset the following sequences.}}
56 \begin{itemize}
57 \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  $c+a > b$ .
58 \item The area of triangle with side lengths  $\{a,b,c\}$  is given by Heron's formula:
59  $A=\sqrt{s(s-a)(s-b)(s-c)}$ , where  $s$  is the semi perimeter  $\frac{(a+b+c)}{2}$ .
60 \item The volume of a regular tetrahedron of edge length 1 is  $\frac{\sqrt{2}}{12}$ .
61 \item The quadratic equation  $ax^2+bx+c=0$  has roots  $r_{1,2}=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ .
62 \end{itemize}
63 \end{frame}
64
65 \begin{frame}{\textcolor{white}{5. Typeset the following sequences.}}
66 \begin{itemize}
67 \item The derivative of a function  $f$ , denoted  $f'$ , is defined by
 $f'(x)=\lim_{h\rightarrow 0}\frac{f(x+h)-f(x)}{h}$ 


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68 \item A real valued function  $f$  is  $\text{convex}$  on an interval  $I$  if  $[f(\lambda x + (1-\lambda)y) \leq \lambda f(x) + (1-\lambda)f(y)]$  for all  $\{x,y\} \in I$  and  $0 \leq \lambda \leq 1$ .
69 \item The general solution to the differential equation  $[y''-3y'+2y=0]$  is  $[y=C_1e^x+C_2e^{2x}]$ 
70 \item The  $\text{Fermat number}$   $F_n$  is defined as  $[F_n=2^{2^n}]$ ,  $n \geq 0$ .
71 \end{itemize}
72 \end{frame}
73
74 \begin{frame}{\textcolor{white}{6. Make the following equations. Notice the large delimiters.}}
75 \begin{itemize}
76 \item  $\frac{d}{dx} \left( \frac{x}{x+1} \right) = \frac{1}{(x+1)^2}$ 
77 \item  $\lim_{n \rightarrow \infty} \left( 1 + \frac{1}{n} \right)^n = e$ 
78 \item  $\left| \begin{array}{cc} a & b \\ c & d \end{array} \right| = ad - bc$ 
79
80
81
82
83 \item  $R_{\theta} = \begin{bmatrix} \cos \theta & -\sin \theta \\ \sin \theta & \cos \theta \end{bmatrix}$ 
84
85
86 \end{array} \right]
87 \end{itemize}
88 \end{frame}
89
90 \begin{frame}{\textcolor{white}{6. Make the following equations. Notice the large delimiters.}}
91 \begin{itemize}
92 \item  $\left| \begin{array}{ccc} a_1 & a_2 & a_3 \\ b_1 & b_2 & b_3 \end{array} \right| = \left| \begin{array}{cc} a_2 & a_3 \\ b_2 & b_3 \end{array} \right| - a_1 \left| \begin{array}{cc} b_1 & b_3 \end{array} \right| + \left| \begin{array}{cc} a_1 & a_3 \end{array} \right| b_2 - \left| \begin{array}{cc} a_1 & a_2 \end{array} \right| b_3$ 
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105 \end{array} \right|
106
107 \item  $f(x) = \begin{cases} -x^2, & x < 0 \\ x^2, & 0 \leq x \leq 2 \\ 4, & x > 2 \end{cases}$ 
108
109
110 \item  $\begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix} = \begin{bmatrix} a_{11}b_{11} + a_{12}b_{21} & a_{11}b_{12} + a_{12}b_{22} \\ a_{21}b_{11} + a_{22}b_{21} & a_{21}b_{12} + a_{22}b_{22} \end{bmatrix}$ 
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120 \end{array} \right]
121 \end{itemize}
122 \end{frame}
123 \begin{frame}{\textcolor{white}{7. Make the following multi-line equations.}}
124 \begin{eqnarray*}
125 (a+b)^2 & = & (a+b)(a+b) \\
126 & = & (a+b)a + (a+b)b \\
127 & = & a(a+b) + b(a+b) \\
128 & = & a^2 + ab + ba + b^2 \\
129 & = & a^2 + ab + ab + b^2 \\
130 & = & a^2 + 2ab + b^2
131 \end{eqnarray*}
132
133 \end{frame}
134
135 \begin{frame}{\textcolor{white}{7. Make the following multi-line equations}}
136 \begin{eqnarray*}
137 \tan(\alpha + \beta + \gamma) & = & \frac{\tan(\alpha + \beta) + \tan \gamma}{1 - \tan(\alpha + \beta) \tan \gamma}
138 \end{eqnarray*}
139 \end{frame}

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136 \begin{eqnarray*}
137 \tan(\alpha+\beta)&=&\frac{\tan(\alpha)+\tan\beta}{1-\tan(\alpha)\tan\beta} \\
138 &=&\frac{\frac{\tan\alpha+\tan\beta}{1-\tan\alpha\tan\beta}+\tan\beta}{1-(\frac{\tan\alpha+\tan\beta}{1-\tan\alpha\tan\beta})\tan\beta} \\
139 &=&\frac{\tan\alpha+\tan\beta+(1-\tan\alpha\tan\beta)\tan\beta}{1-\tan\alpha\tan\beta-(\tan\alpha+\tan\beta)\tan\beta} \\
140 &=&\frac{\tan\alpha+\tan\beta+\tan\beta-\tan\alpha\tan\beta\tan\beta}{1-\tan\alpha\tan\beta-\tan\alpha\tan\beta-\tan\beta\tan\beta} \\
141 \end{eqnarray*}
142
143 \end{frame}
144
145 \begin{frame}{\textcolor{white}{7. Make the following multi-line equations.}}
146 \begin{eqnarray*}
147 \prod_p \left(1-\frac{1}{p^2}\right) &=& \prod_p \frac{1}{1+\frac{1}{p^2}+\frac{1}{p^4}+\dots} \\
148 &=& \left(\prod_p \left(1+\frac{1}{p^2}+\frac{1}{p^4}+\dots\right)\right)^{-1} \\
149 &=& \left(1+\frac{1}{2^2}+\frac{1}{3^2}+\frac{1}{4^2}+\dots\right)^{-1} \\
150 &=& \frac{6}{\pi^2} \\
151 \end{eqnarray*}
152
153 \end{frame}
154
155 \begin{frame}{\textcolor{white}{7. Make the following multi-line equations.}}
156 \begin{eqnarray*}
157 1+2&=&3 \\
158 4+5+6&=&7+8 \\
159 9+10+11+12&=&13+14+15 \\
160 16+17+18+19+20&=&21+22+23+24 \\
161 25+26+27+28+29+30&=&31+32+33+34+35 \\
162 \end{eqnarray*}
163
164 \end{frame}
165 \begin{frame}
166 \begin{center}
167 \Huge\textcolor{white}{THANK YOU :)} \\
168 \end{center}
169
170 \end{frame}
171 \end{document}
172

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