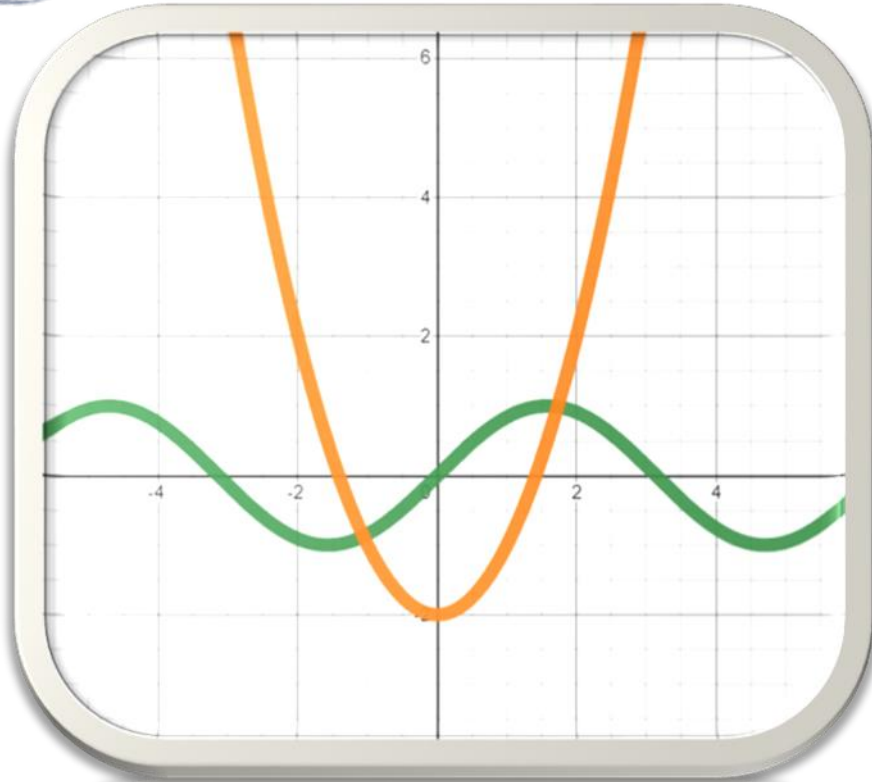


GDC SHADNAGAR



Ranga Reddy - Dist

Department of Mathematics



Certificate Course

on

DESMOS

GRAPH CALCULATOR

Syllabus for Certificate on Course

- 👤 Location of a Point in (a) Cartesian Plane (b) Parametric Plane.
- 👤 Straight Line Equation in (a) Cartesian Form (b) Parametric Form.
- 👤 Different Types of Curves in (a) Cartesian Form (b) Parametric Form.
- 👤 Limit of Function Examples with Desmos Graphing Calculator.
- 👤 Continuity of Function Examples with Desmos Graphing Calculator.
- 👤 Derivation of Function Examples with Desmos Graphing Calculator.
- 👤 Verification of Mean Value Theorems with Desmos Graphing Calculator.
- 👤 Verification of Taylor's Theorem with Desmos Graphing Calculator.
- 👤 Upper Riemann Sum and Lower Riemann Sum Examples with Desmos Graphing Calculator.
- 👤 Making Shades with Inequalities with Desmos Graphing Calculator.
- 👤 Making Area with Different Types of Curves with Desmos Graphing Calculator.
- 👤 Matrices Algebraic Operations with Desmos Graphing Calculator.
- 👤 Matrices Transpose with Desmos Graphing Calculator.
- 👤 Matrices Inverse with Desmos Graphing Calculator.

Course Details

Duration of Course: 30 days

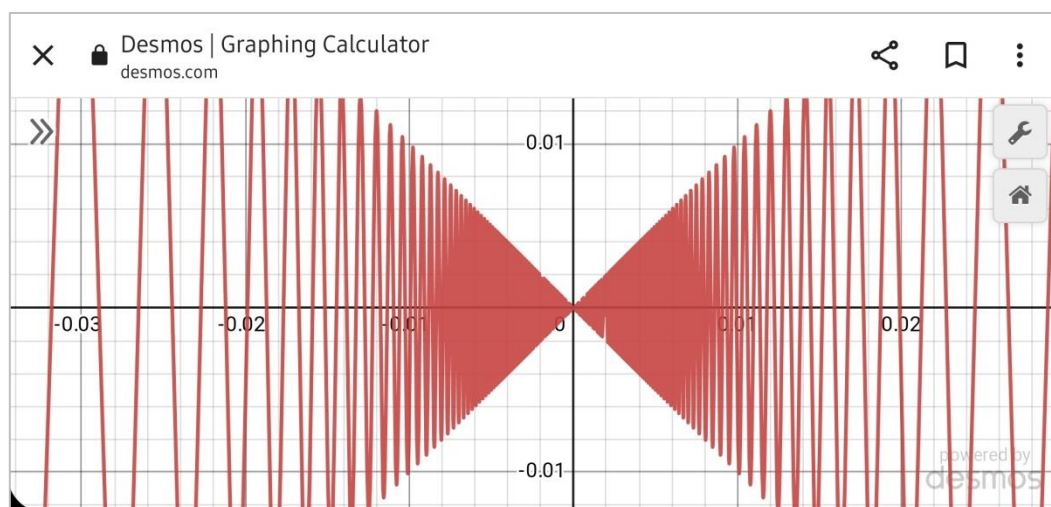
Faculty Involved: T. SRIKRISHNA, Asst Prof of Mathematics, GDC SHADNAGAR.

Percentages of Students Participated: 70% of Students participated in this program.

Project 01

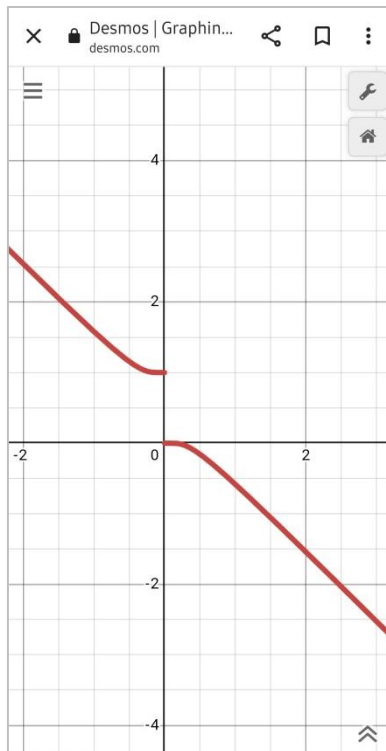
Name of the Project: Continuity Test with help of DESMOS GRAPHIC CALCULATOR

Ex 01: Prove that $f(x) = x \sin \frac{1}{x}$ if $x \neq 0$ and $f(0) = 0$ is continuous at $x = 0$.



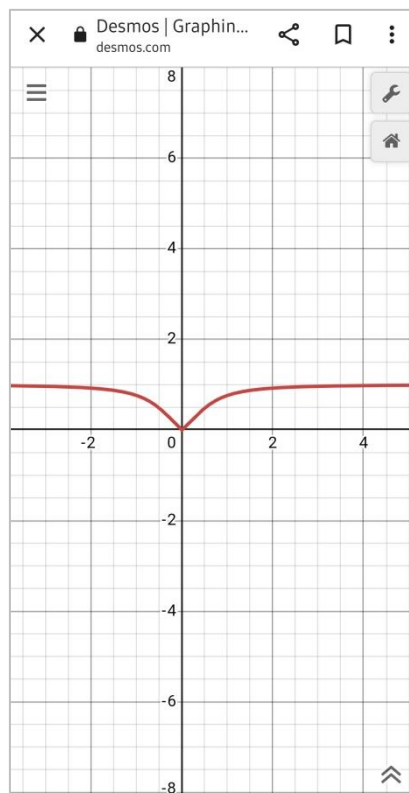
By using the graph we can say the giving function is continuous at origin.

Ex 02: Prove that $f(x) = 1/(1-e^{1/x})$ has an ordinary Discontinuity at $x = 0$



By using the graph we can say the giving function is discontinuous at origin.

Ex 03: Discuss the Continuity of $f(x) = \frac{x(e^{1/x} - e^{-1/x})}{(e^{1/x} + e^{-1/x})}$ when $x \neq 0$ and $f(0) = 0$ at the origin

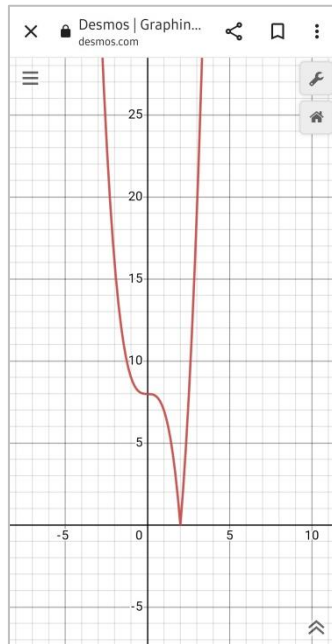


By using the graph we can say the giving function is continuous at origin.

Project 02

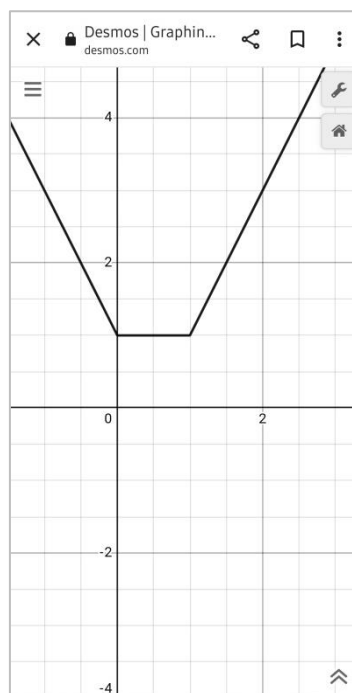
Name of the Project: Discussion on Differentiability at a particular point

Ex 01: $f(x) = |x^3 - 8|$ is doesn't differentiable at $x = 2$.



There is sharp edge at $x = 2$, therefore the function is doesn't differentiable at $x = 2$.

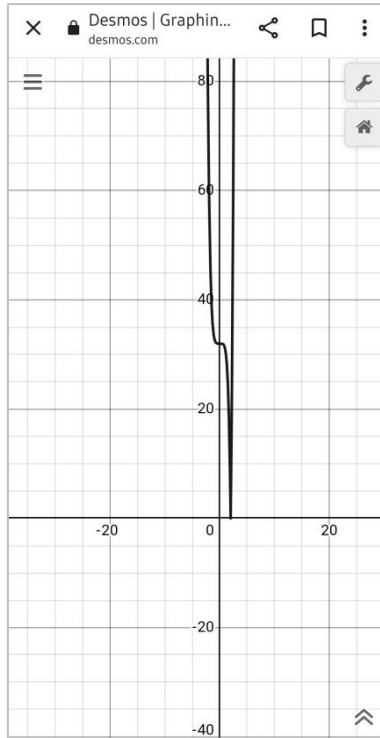
Ex 02: $f(x) = |x| + |x - 1|$ is not differentiable at $x = 0, 1$



There are sharp edges at $x = 0, 1$, therefore the function is doesn't differentiable at $x = 0, 1$.

Ex 03: $f(x) = |x^5 - 32|$ is doesn't differentiable at $x = 2$.

There is sharp edge at $x = 2$, therefore the function is doesn't differentiable at $x = 2$.

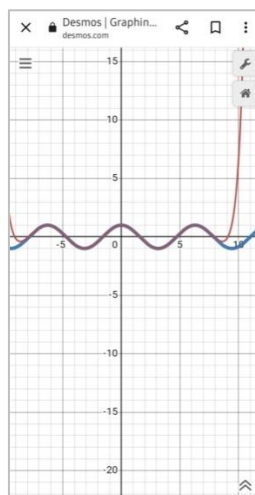


There is sharp edge at $x = 2$, therefore the function is doesn't differentiable at $x = 2$.

Project 03

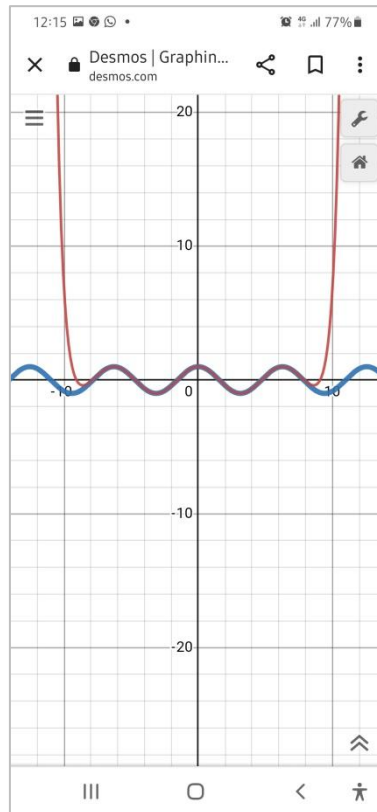
Name of the Project: Taylor's Series

Ex 01: Expansion of $f(x) = \sin x$



The blue line represents the $\sin x$ graph and red line represents an infinite degree polynomial. The polynomial is $x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \frac{x^9}{9!} - \frac{x^{11}}{11!} + \frac{x^{13}}{13!} - \frac{x^{15}}{15!} + \frac{x^{17}}{17!} - \dots$

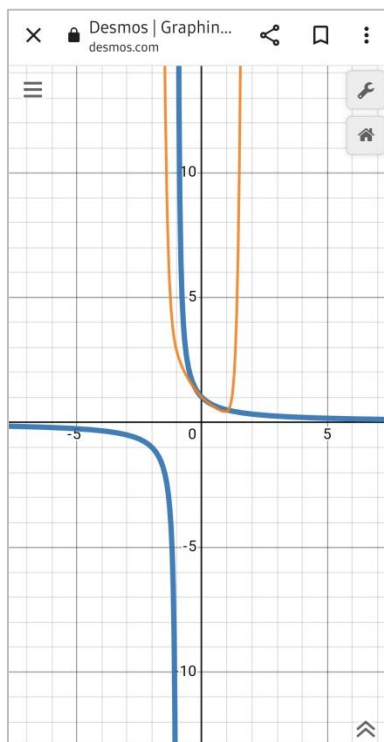
Ex 02: Expansion of $f(x) = \cos x$



The blue line represents the $\cos x$ graph and red line represents an infinite degree polynomial.

The polynomial is $1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \frac{x^8}{8!} - \frac{x^{10}}{10!} + \frac{x^{12}}{12!} - \frac{x^{14}}{14!} + \frac{x^{16}}{16!} - \dots$

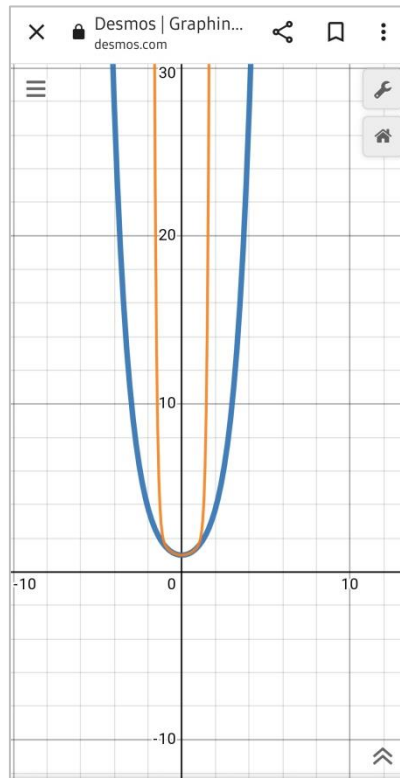
Ex 03: Expansion of $f(x) = 1/(1+x)$



The blue line represents the $1/(1+x)$ graph and red line represents an infinite degree polynomial. The polynomial is $1 - x + \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^4}{4!} - \frac{x^5}{5!} + \frac{x^6}{6!} - \frac{x^7}{7!} + \frac{x^8}{8!} - \dots$

Ex 04: Expansion of $f(x) = \cosh x$

The blue line represents the $\cosh x$ graph and red line represents an infinite degree polynomial. The polynomial is $1 + \frac{x^2}{2!} + \frac{x^4}{4!} + \frac{x^6}{6!} + \frac{x^8}{8!} + \frac{x^{10}}{10!} + \frac{x^{12}}{12!} + \frac{x^{14}}{14!} + \frac{x^{16}}{16!} + \dots$



Achievement 01

Our final year students prepared a student study project, the topic is “**Logo Design with Mathematical Shapes**” and it is selected by CCE Hyd for state level presentation.

The following students participated in this Study Project

Sl. No	Roll No	Name of the Student
1	19033067441002	M. Srikanth
2	19033067441003	S. Rama Devi
3	19033067441005	V. Shailaja
4	19033067468002	P. Archana
5	20033067468004	P. Samuel

Achievement 02

In university external exams SEM III students pass percentage is 100%

List of Students who are participated in the Certificate on Course

Sl. No	Roll No	Name of the Student	No of Classes Attended by the Student
1	19033067441002	M. Srikanth	23
2	19033067441003	S. Rama Devi	26
3	19033067441005	V. Shailaja	24
4	19033067468002	P. Archana	24
5	20033067441001	B.M.F.Gagan	28
6	20033067441004	K. Nandini	23
7	20033067441005	P. Akhila	24
8	20033067468001	A. Sravani	24
9	20033067441006	P. Rameshwari	22
10	20033067468004	P. Samuel	26
11	21033674681003	C. Chandra Shekar	26
12	21033674681006	J. Neha	24
13	21033674681011	K. Sravani	22
14	21033674681021	Savitha Kumari	23
15	21033674681017	P. Bhargavi	24



GDC SHADNAGAR

Ranga Reddy - Dist



DEPARTMENT OF MATHEMATICS Certificate on Course on Desmos Graph Calculator

Certificate of Participation

*This is to Certify that -----
has participated in Certificate on Course on Desmos Graph Calculator which is conducted by
Department of Mathematics in this Academic Year 2021 - 22.
In this course his/her performance is Excellent.*

Department of Mathematics

Principal





Using Triple Camera
 with my Galaxy M30s

