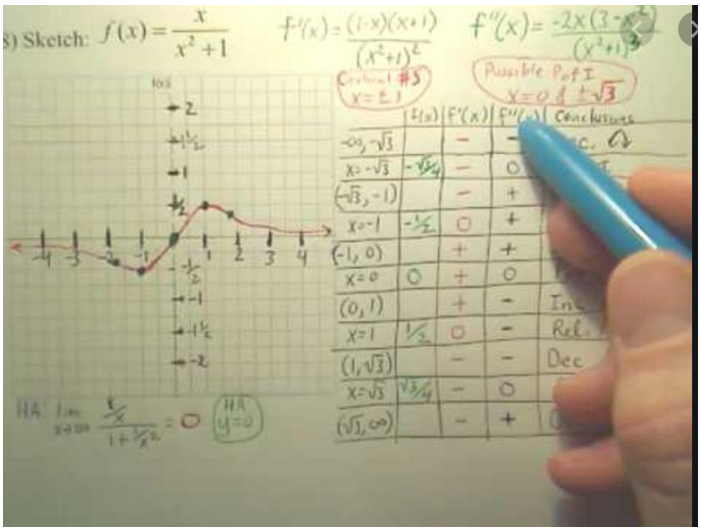
Curve Sketching Video Assignment



Your task is simple…you will need to sketch your function as accurately as possible using the tools of curve sketching as learned in chapter 4. Do not use a table of values.

Some key characteristics include, but are not limited:

- **Intercepts**
- **Extrema**
- **Points of inflection**
- **Intervals of increase/decrease**
- **Concavity**

You will record yourself going through the process of figuring out any of your key features and then sketching the graph, while explaining what you are doing the entire way**. No voiceovers…you must explain** AS **you go through the calculations.**

A couple of tips:

- **Solve the problem first. Be sure you know what you are doing.**
- **Figure out an organizational pattern for how you want to present it.**
- **Usage of colour greatly helps with it comes to writing.**
- **Have a grid ready for sketching…I don't need to see you creating a grid.**

Attached is the rubric that will be used to mark your video.

LAST BUT NOT LEAST, YOUR VIDEO MUST BE LESS THAN 10 MINUTES LONG.

RUBRIC FOR MATHEMATICAL PRESENTATIONS

	UNSATISFACTORY (0 – 5)	BASIC (5 – 6)	PROFICIENT (7 – 8)	DISTINGUISHED (9 – 10)
Mathematical Concepts	Displays errors in knowledge of mathematical concepts.	Explains mathematical concepts without difficulty but expresses ideas in rudimentary form.	Clearly articulates mathematical concepts.	Fully and eloquently articulates mathematical concepts. Develops connections among mathematical concepts.
Mathematical Procedures	Has difficulty explaining mathematical procedures.	Explains mathematical procedures without difficulty.	Explains mathematical procedures without difficulty and provides partial explanations for why mathematical procedures are valid or appropriate.	Explains mathematical procedures without difficulty and provides full explanations for why mathematical procedures are valid or appropriate.
Mathematical Representations (equations, diagrams, graphs, tables, etc.)	Representations are inappropriate or unclear.	Representations clear and appropriate, but no connections are made between representations.	Representations are clear and appropriate, with explanations of significant elements. Mentions connections among representations.	Representations are clear and appropriate, with explanations of significant elements. Clearly explains connections among mathematical representations.
Mathematical Communication	Consistently inappropriate use of mathematical terminology and/or symbols.	Adequate use of mathematical terminology and symbols; may contain minor flaws.	Appropriate use of mathematical terminology and symbols.	Sophisticated use of mathematical terminology and symbols.
Presentation Structure	The presentation has no clearly defined structure, or the structure is chaotic.	The presentation has a recognizable structure with an introduction and conclusion.	The presentation has a clearly defined structure with some clear transitions and a logical introduction and conclusion.	The presentation has a clearly defined structure with elegant transitions and an effective introduction and conclusion.
Written Communication	Writing is illegible or not adequately used to record information.	Writing is legible and grammatically correct.	Writing is legible and well-organized.	Communicates clearly, effectively and enhanced with colour. Legible and grammatically correct.
Oral Communication	Does not speak clearly or demonstrates consistent grammatical errors.	Speaks clearly with no grammatical errors.	Speaks clearly and effectively.	Speaks clearly and effectively in a sophisticated manner.

Total mark: /70

a. $a(x) = \frac{x - 3}{x^2 + 7}$

b. $b(x) = (x - 1)^{\frac{2}{3}}$

c. $c(x) = \frac{2x}{x - 2}$

d. $d(x) = \frac{x - 5}{x + 5}$

e. $e(x) = \frac{x^2 - 2x - 15}{x + 3}$

f. $f(x) = \frac{3x - 1}{x^2 + 1}$

g. $g(x) = \frac{x^2 + 1}{4x^2 - 9}$

h. $h(x) = x(x - 4)^{\frac{2}{3}}$

i. $i(x) = \frac{x}{x^2 - 4x + 4}$

j. $j(x) = 2x^{\frac{5}{3}} - 5x^{\frac{4}{3}}$

k. $k(t) = \frac{t^2 - 3t + 2}{t - 3}$

l. $l(x) = \frac{2x^2 - 7x + 5}{2x - 1}$

m. $m(x) = \frac{4x^3 - x^2 - 15x - 50}{x^2 - 3x}$

n. $n(x) = \frac{3x^3 - 5}{4x^2 + 1}$

o. $o(x) = \frac{3x - 1}{x^2 - 2x - 3}$,

p. $p(x) = \frac{x^2 - 2x - 8}{x^2 - 1}$

q. $q(x) = \frac{x^3 + 2x}{x - 2}$

r. $r(x) = \frac{x^3 + 8}{x}$

s. $s(x) = \frac{5x}{(x - 1)^2}$

t. $t(x) = \frac{7x^2 - 7}{x^3}$

u. $u(x) = \frac{1}{5}(x - 4)^{\frac{5}{3}} + 2(x - 4)^{\frac{2}{3}}$

v. $v(x) = -\frac{x^4}{4} + x^2 - 1$

w. $w(x) = 12x^{\frac{2}{3}} - 4x$

x. $f(x) = \frac{x^3 - x^2 - 16x + 16}{2x^2 + 3x - 2}$

y. $f(x) = \frac{x^2 - 2x - 3}{x^2 + 6x}$

z. $f(x) = \frac{2x^2 + 14x - 60}{x^2 - x - 30}$