

## Evaluation

A final interview<sup>1</sup> was held with Mr. Christos to check that the program satisfies all success criteria.

Success Criteria	Met?	Feedback
Program graphs any continuous function within some range	Yes	“The program is able to graph any continuous function”
Program calculates local minimum points	Yes	“All minima and maxima can successfully be found”
Program calculates local maximum points	Yes	
Program calculates the y-coordinate for any given x-value	Yes	“[these] as well [can successfully be found]”
Program finds roots to the function (x-intercepts)	Yes	
Program finds y-intercept	Yes	
Program finds intersection of functions	Yes	
Program calculates the area under the graph	Yes	“All very precise calculations and quick as well”
Program calculates the area between the graph and the x-axis	Yes	
Program calculates the volume of revolution	Yes	
Program allows graphing multiple functions	Yes	“It can also graph multiple functions at once”
Program saves graphs, along with any elements found in pdf	Yes	“The pdf is really neat”
Program emails pdf to students without crashing without internet	Yes	“I can also send any file I want [through email]”
Program allows user to edit classes	Yes	“Managing classes is easy” “No data lost, perfect”
Program runs on smartboard	Yes	“[It] work[s] well on the smartboard”
User-friendly GUI that does not crash	Yes	“The interface suits me very well”

### Efficiency/Effectiveness

The program meets all of the success criteria.

File access both to text files and pdf is immediate and takes up neither much time nor much space in memory.

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<sup>1</sup> See Appendix C

The mathematical algorithms that are used run very quickly and terminate after a predefined number of iterations, which is a tradeoff between time efficiency and accuracy. The number of points used for each calculation was tested and found to be achieving very good and accurate results in just a few seconds.

#### Extensibility and recommendations for future development

The main addition that could be made to the program is to have it work for discontinuous functions as well, as Mr Nikolaidis noted. The way that the program was developed, with multiple objects and methods, it will be easy for someone, who in the future tries to further develop the program, to add an extra method to break discontinuous functions at their points of discontinuity into multiple continuous ones. By doing this calculation just once and passing the new functions as arguments to the already created methods, this type of functions will also be integrated to the program, which is the main disadvantage of the current solution.

Word Count: 205