SIT190

Introduction to Functions, Relations and Graphs

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Learning Summary Report

# Self-Assessment Details

The following checklists provide an overview of my self-assessment for this unit.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Pass (D) | Credit (C) | Distinction (B) | High Distinction (A) |
| Self-Assessment |  |  |  | ✓ |

Self-Assessment Statement

# Declaration

I declare that this portfolio is my individual work. I have not copied from any other student’s work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part of this submission been written for me by another person.

Signature: **Ethan Cowlishaw**

# Portfolio Overview

Start with something like “This portfolio includes work that demonstrates that I have achieve all Unit Learning Outcomes for SIT190 Unit Title to a **Pass** level.”

Describe your learning journey – where did you start, what did you learn, where will this take you? Note significant milestones or hurdles you overcame

Provide a justification for why you should receive the above grade… Write this for the assessment panel – tell them why you should get this grade.

* For Pass: you need to indicate how you have demonstrated all Unit Learning Outcomes to an acceptable level.
* For Credit: you need to indicate how you have demonstrated all Unit Learning Outcomes to a good level.
* For Distinction: you need to indicate how you have been able to apply all of the Unit Learning Outcomes in achieving the distinction tasks.
* For High Distinction: you need to indicate how you have been able to extend beyond the material presented in the unit.

In this section, refer to the tasks you have completed. These will be attached by OnTrack after this summary. Do not try to demonstrate the outcomes here, this is just a summary.

Think of this like a cover letter to a job application. The unit learning outcomes are the job’s selection criteria. Your tasks provide the evidence of how you have met these criteria.

I believe I deserve a high distinction.

I started from a mathematical desert where I felt incompetent and unable to perform mathemathics past basic algebra. I struggled to understand how to apply rudimentary principles like BODMAS as it felt contradictory to me in the way it was applied.

Learning to move past negative feelings I had about mathematics being impossible for me was perhaps the greatest challenge at the beginning. There were often pervasive moments where I felt like giving up as the problems felt as though they were advancing too fast and to a point way out of my skill level. I was already on my way to shedding old ghosts, so these moments were often fleeting. I had a main goal of wanting to do the absolute best I could in the face of complete and utter confusion. I knew I had to do the best I could as I have hobbies (game development) and career goals that require more complex mathematics than the simple algebra I knew. My goal was enough of a driving force to push me to go beyond what I thought I was capable of and proved to me that given enough commitment to difficult problems, a solution can be found both in a literal sense and in a metaphorical sense.

I am now capable of performing basic calculus, basic trigonometry, operations on cubics, quadratics and more. I can execute tasks like drawing accurate graphs to inform me of how to best approach problems. I now understand what a logarithm is and does rather than being worried about them. While all of this is important, I believe the most important task I am capable of is knowing how to find, calculate, and troubleshoot the answers I need for a given problem.

Through my study, I have collated theory and practical class-based experience into a useful tool (Obsidian.md) that I will be able to physically reference and utilise in real-life problems I have encountered. A problem that I was encountering was trying to predict where a projectile would land which would require the use of the displacement equation . I had no reference point on understanding how this equation found the displacement. My new knowledge of functions has allowed me to see past the initially overwhelming amount of variables and accept that it is an appropriate model for finding displacement. Acceptance of and intense deliberation over mathematical concepts have been common themes throughout this course for me. 4.2C (task 1 and 2) helped me see the purposes of functions and 6.1P (task 3) gave me good footing in understanding what exactly a function is.

Another example is the use of trigonometry to make a program that reflects beams of light. I required knowledge of what things such as ‘normal’ are, what sin and cos actually do, how to find angles of vectors to find reflection points in 3D space and so on. The 6.2HD was pivotal in my understanding of the applications of trigonometry. I have been attempting to create this so I can make puzzles for games, and now that I have time away from university, I can now attempt to utilise my new knowledge to create this program.

As a last example, the purposes calculus of calculus being slowly revealed over the last 4 weeks of classes with content felt like a great fog had been lifted. I gradually understood this incredibly daunting monolith from my youth. Moments where I saw others complain about calculus being difficult - “You think this is hard? Try calculus…” made me never want to attempt or even look at it. I can now do it though.

Being able to be used for finding the area of curves has been a serious turning point in my understanding of mathematics. I have been able to see so many new opportunities for development from this. I had a moment during a workshop where I understood that definite integrals were incredibly useful so I searched up ways they could be used. I learnt calculus has applications in physics, geometry, engineering, and more. I have always been curious on how to find the displacement of objects as mentioned in my previous example – now I can do that and visualise it.

With differentiation, I learnt that through it and specifically in 7.1P, that I could see moments in time frozen in a graph and find the exact moment an event occurred. This was exciting as I have had a keen interest on the microscopic ever since I was young. Seeing a precise moment in time was like seeing a mathematical version of a bacteria.

# Reflections

## What was your chosen persona: Magi, Knight, Squire or Page?

Reflect on your learning in this unit with respect to the attributes of your goal persona:

* Independence
* Resourcefulness
* Collaboration

## The most important things I learnt:

Think about what you have learnt in this unit and reflect on what you think were key learning points, tasks, activities, etc. Did you learn what you wanted/expected to learn?

The main goal of enrolling in this unit was to improve at mathematics. More specifically, I wanted to understand trigonometry better and to begin my journey to understanding calculus. I strongly believe I achieved that target as I have a increasingly in-depth knowledge of mathematics where I improve each day, I understand trigonometry better, calculus is a tool I am excited to use more, and I have passed all my assessments.

## I feel I learnt these topics, concepts, and/or tools really well:

What things are you really confident about now?

I picked up fractions well, meaning I can now do them fast and accurately. I do still struggle to simplify complicated fractions but I can mentally simplify basic fractions with ease.

I understand matrices to a relatively high degree where I believe I could perform large operations if given enough time.

I am confident in integrating and differentiating in calculus but I do not fully understand the theory behind either.

## I found the following topics particularly challenging:

What was the most challenging part of the unit? Have you mastered those ideas, concepts, or skills now? What did you learn about yourself in how you dealt with these challenges?

By far the most challenging moments was during learning logarithms. I could look at them for long periods of time and struggle to understand how the outputs of logarithms connected to exponents. This led to hours of frustration over not being able to swap them back and forth without excessive amounts of time spent on trying to do so.

I now understand how logarithms and exponents relate to each other. I can not say I have mastered them as I still need more time than is seemingly necessary to convert them but I definitely have grown stronger in them.

Through my struggles with logarithms, I learnt that sometimes letting the problem go for the day is necessary. Trying the best you can for every moment of a problem is feasible only until the exhaustion kicks in. I found a rest, usually sleeping, helps greatly understanding problems better the next day.

## I found the following topics particularly interesting:

What was the most interesting or valuable thing you learnt from this unit? This could be related to the unit concepts, or general things you learnt about yourself.

## I still need to work on the following areas:

University is about developing lifelong learning skills. Given what you have achieved already, what is the next step for you? How will you build upon what you learnt in this unit? This could be related to the unit concepts and skills, or to personal traits you identified as needing further development.

## The things that helped me most were:

What were the most helpful/useful resources? How did they assist you with your learning?

## My progress in this unit was …:

Include a screenshot of your **progress graph** from **OnTrack**, and comment on what happened from your perspective… what does the graph say about how you approached the unit?

A graph of a graph

Description automatically generated with medium confidence

From the graph you can see that I followed the target line fairly closely. This is evidence that I cared strongly about the deadlines given by OnTrack and committed to completing my work to a high degree.

## If I did this unit again, I would do the following things differently:

Looking back, what is it that you think you could have done differently to help you achieve the most you could in this unit (both in terms of the unit concepts and skills, and in terms of personal growth). How will you approach learning in the future?

## Other…:

Adjust this heading to add any other reflections you think help you demonstrate what you got out of this unit, and how it has or will help shape you as an IT Professional.