**ENGG100 LAB 2 REPORT**

**INSTRUCTIONS BEFORE SUBMISSION**

* Rename this report to Lab2\_StudentID
* Make sure you add all the required screenshots/evidence for all the tasks
* Fill in the header information with your name, student ID & date
* Make sure to add one line to each task explaining what you have done for that task and what you have learnt

**TASK 1**

Find the surface area of a closed cylinder with height of 30cm and radius of 5cm, using the formula below:

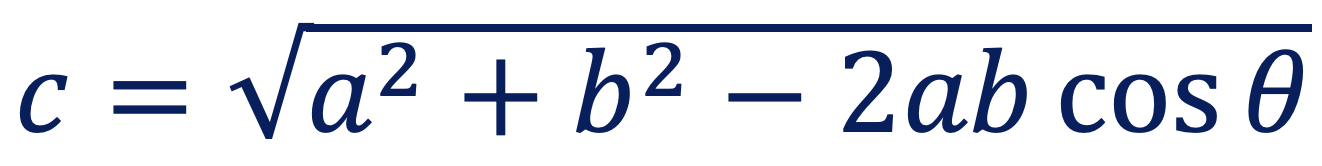
**A close-up of a number

Description automatically generated**

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| **Screenshot evidence of code & results:** |
| **Explanation of task:** |

**TASK 2**

Using the law of cosines, the third side of a triangle with sides a, b, and angle between them is theta:



Find the third side of a triangle using the formula above with:

* a = first number of your student ID
* b = last two numbers of your student ID
* theta = pi/4

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| **Screenshot evidence of code & results:** |
| **Explanation of task:** |

**TASK 3**

Write a short script that performs the below tasks, and **make sure you comment each line to explain what your code does at each step**. Set the initial values of the following variables, then calculate area, volume and mass using the formulas below:

* radius = first digit of your student ID
* height = second & third digits of your student ID
* density = last number of your student ID
* calculate area = pi \* radius^2
* calculate volume = area \* height
* calculate mass = volume \* density

Display area, volume, mass to the user in 1 display function, e.g. “area: …, volume: …, mass: …”

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| **Screenshot evidence of code & results:** |
| **Explanation of task:** |

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**TASK 4**

A phone costs $950 to buy outright. However, if you sign a three-year contract with telecommunications company A, you can get the phone for $80 a month, with $500 monthly credit. Telecommunications company B offers a bring-your-own-phone plan at $20 a month for the same amount of monthly credit. How much will you pay for each option over 3 years?

Hint: You will need to create the variables below and **add comments to each line** to explain the calculations:

* phone\_cost
* pay\_duration
* pay\_month\_A
* pay\_month\_B
* total\_A
* total\_B

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| **Screenshot evidence of code & results:** |
| **Explanation of task:** |

**TASK 5 (BONUS)**

Write a short program to convert from feet-and-inches to meters. Request two inputs from the user (feet, then inches) using the input function. Determine and implement an equation for the conversion for both values to meters. Display both solutions to the user using just 1 disp() function and make sure to add a comment to each line to explain your code.

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| **Screenshot evidence of code & results:** |
| **Explanation of task:** |