Completing up until the end of stage 1 of ***Week 3.2 Practical*** will give you the knowledge you need to complete the beginner task – the advance task will require research

***Beginner***

1. Using [DESMOS](https://www.desmos.com/calculator), to define
2. Complete the table showing the values of this function in the range {-2π <= x <= 2π}

|  |  |
| --- | --- |
| Input | Output |
| -2 π | 2.121 |
| -1.5 π | 2.121 |
| -1 π | -2.08 |
| -0.5 π | -1.68 |
| 0 π | 3.12 |
| 0.5 π | 2.56 |
| 1 π | -2.08 |
| 1.5 π | -2.12 |
| 2 π | 2.12 |

1. Limit the range of your graph to {-2π <= x <= 2π}
2. Plot each of these points on your graphs as coordinates.
3. Provide a screenshot of your graph below:

A graph on a grid

AI-generated content may be incorrect.

1. Is this a quadratic function? Prove your answer with the second difference rule. You must show your workings below.

First Difference = 0.5752, 3.5529,0.3669,-2.0765

Second Difference = 2.9777, -3.1860, -2.4434

Therefore, as second difference is not constant, equation is not quadratic.

***Advanced – Parametric Functions***

1. Using [DESMOS](https://www.desmos.com/calculator), to define
2. Plot the coordinate at which the line crosses both the x and y axis
   1. Hint: There are four points… You must merge the two functions into one line, like coordinates.
3. Provide a screenshot of your graph below:

A red line drawn on a grid

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