MATH 202, Spring 2024 **Name:** _____
In class work week 1 **Row and Seat:** _____

"Dear Bear, it's no use, the world is like that. So stay where you are, and live long." MARY OLIVER

In class work **1** has questions **1** through **2** with a total of **6** points. Turn in your work at the end of class *on paper*. This assignment is due *Thursday 25 January 13:20*.

1. Define a function F by $F(x) = \begin{cases} 5 - x^2 & 0 \le x \le 2 \\ 1 & 2 < x \le 4 \end{cases}$.

[1] (a) Sketch a graph of F. Notice $\text{dom}(F) = [0,4]$, so don't extend the graph to the left of zero or to the right of four.

[1] (b) The graph of F is revolved about the x-axis, forming a solid of revolution. As best you can, draw a picture of this solid.

1 (c) Find the numerical value of the volume of the solid generated by revolving the graph of F about the x-axis. You may use strips that perpendicular or parallel to the axis of rotation–the choice is yours.

2. Define a function G by $G(x) = \begin{cases} 2-x & 0 \le x \le 1 \\ 1 & 1 < x \le 2 \end{cases}$.

[1] (a) Sketch a graph of G. Notice $\text{dom}(G) = [0,2]$, so don't extend the graph to the left of zero or to the right of two.

[1] (b) The graph of G is revolved about the y-axis, forming a solid of revolution. As best you can, draw a picture of this solid.

1 (c) Find the numerical value of the volume of the solid generated by revolving the graph of G about the y-axis. You may use strips that perpendicular or parallel to the axis of rotation–the choice is yours.