

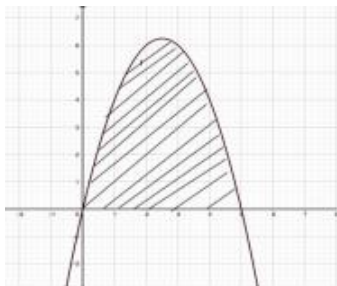
In addition to the content included on all the old finals, you will be responsible for the new content from Sec7.1-7.4

Please see below for some sample questions:

1. Sketch the region enclosed by the curves, shade the relevant area, set up the integral and compute.

$$f(x) = x^2 - 2x + 3, \quad g(x) = 2x$$

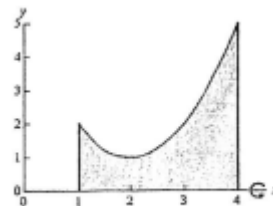
2. **SET UP, but do not evaluate** an integral that represents the volume of the solid generated by revolving the region as shows in the picture bounded by the curve $y = 5x - x^2$ and the x-axis about:



- a) x -axis
- b) y -axis
- c) the line $y = -2$

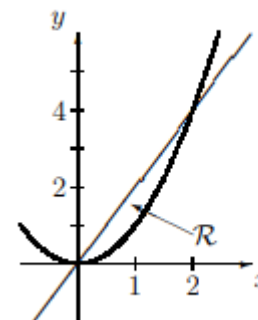
3. Find the area bounded by the two curves $f(x) = x^2 - 4$ and $g(x) = 2x - 1$. Sketch the region, shade the relevant area and then find the area of this region.

4. **SET UP, but do not evaluate** an integral that represents the volume of the solid generated by revolving the region as shows in the picture bounded by the curve $y = x^2 - 4x + 5$, $x = 1$, $x = 4$ and the x -axis about the x -axis.



5. Let \mathcal{R} be the region bounded by $y = 2x$ and $y = x^2$ shown at right.

- a) **SET UP, but do not evaluate** an integral that represents the volume of the solid generated by revolving the region about the x -axis.
- b) **SET UP, but do not evaluate** an integral that represents the volume of the solid generated by revolving the region about the line $x = 2$.



6. Determine the volume of the region bounded by $y = x^2 - 2x$ and $y = x$ that is rotated about

- a) x -axis
- b) y -axis
- c) $y = 4$

