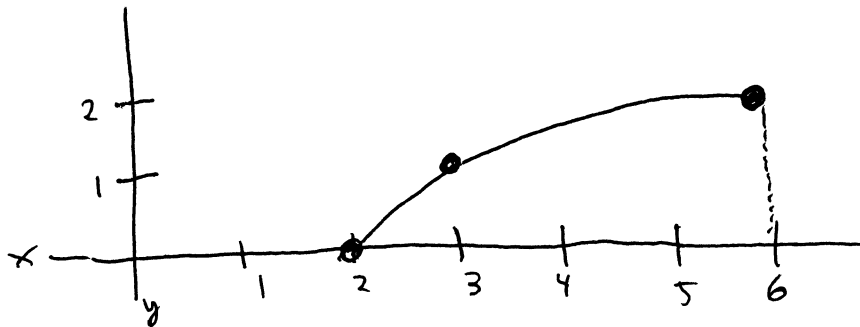


\*\*\* Show All Work on Separate Sheets \*\*

1. (5pts) Evaluate:  $\int_{-1}^2 \frac{x^2}{(x^3 + 4)^2} dx$

2. (5pts) Evaluate:  $\int \frac{5x^2}{\sqrt{1-x^6}} dx$

3. (10pts) Consider the region bounded by  $y = \sqrt{x-2}$ ,  $x = 6$ , and  $y = 0$ . **SET UP** the integrals for finding the volume of revolution for each of these (**you don't need to compute them, just set them up**). The graph is shown, but show your own version for each question and identify important parts.



(a) around  $y = 3$  using disks/washers

(b) around  $x = 6$  using disks/washers

4. (5pts) Find the area the region or the regions enclosed by  $y = x^2$  and  $y = 4x - x^2$ . Also, make to sketch the region and identify the intercepts.