Volume, Part 2 Assignment

Author	**Aaron Tresham**
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Volume, Part 2 Assignment

Question 0

Watch the lecture video here.

Did you watch the video? [Type yes or no.]

For each question below:

- Draw a graph of the region to be rotated.
- Find the volume of the solid.

Note: You **do not** have to do any 3D plots.

Question 1

Use disks to find the volume of the solid obtained by rotating about the x-axis the region between $y = x^3$ and the x-axis from $x = 0$ to $x = 2$. [Answer: $\frac{128\pi}{7}$]

Question 2

Use disks to find the volume of the solid obtained by rotating about the y-axis the region between $y = 2x$ and the y-axis from $y = 0$ to $y = 5$. [Answer: $\frac{125\pi}{12}$]

Question 3

Use washers to find the volume of the solid obtained by rotating about the x-axis the region between $y = \sqrt{x}$ and $y = x^3$ from $x = 0$ to $x = 1$. [Answer: $\frac{5\pi}{14}$]

Question 4

Use washers to find the volume of the solid obtained by rotating about the horizontal line $y = 4$ the region between $y = x$ and $y = x^2$ from $x = 0$ to $x = 1$. [Answer: $\frac{6\pi}{5}$]

Question 5

Use washers to find the volume of the solid obtained by rotating about the y-axis the region between $y = x$ and $y = x^2$ from $x = 0$ to $x = 1$. [Answer: $\frac{\pi}{6}$]

Question 6

Use washers to find the volume of the solid obtained by rotating about the vertical line $x = 3$ the region between $y = x + 2$ and $y = \frac{1}{2}x^2 + 2$ from $x = 0$ to $x = 2$. [Answer: $\frac{8\pi}{3}$]