**Adding and Subtracting Volumes**

With more complex volumes you may need to consider compound areas or volumes of general shapes.



Example

The region $R$ is bounded by the curve with equation $y=x^{3}+2$, the line $y=5-2x$ and $x$ and $y$-axes.

1. Verify that the coordinates of $A$ are $\left(1,3\right)$.

A solid is created by rotating the region $360°$ about the $x$-axis.

(b) Find the volume of this solid.

**Example**

The diagram shows the region $R$ bounded by the curves with equations $y=\sqrt{x}$ and $y=\frac{1}{8x}$ and the line $x=1$.

The region is rotated through $360°$ about the $x$-axis. Find the exact volume of the solid generated.



Test Your Understanding

The area between the lines with equations $y=x$ and $y=\sqrt[3]{x}$, where $x\geq 0$ is rotated $360°$ about the $x$-axis. Determine the volume of the solid generated.



Ex 5C Pg 81-83