

- 4 In each case the region enclosed between the following curves and the x -axis is rotated through 360° about the x -axis. Find the volume of the solid generated.
- (a) $y = (x+1)(x-3)$ (b) $y = 1 - x^2$
(c) $y = x^2 - 5x + 6$ (d) $y = x^2 - 3x$
- 5 The region enclosed between the graphs of $y = x$ and $y = x^2$ is denoted by R . Find the volume generated when R is rotated through 360° about
- (a) the x -axis, (b) the y -axis.
- 6 The region enclosed between the graphs of $y = 4x$ and $y = x^2$ is denoted by R . Find the volume generated when R is rotated through 360° about
- (a) the x -axis, (b) the y -axis.
- 7 The region enclosed between the graphs of $y = \sqrt{x}$ and $y = x^2$ is denoted by R . Find the volume generated when R is rotated through 360° about
- (a) the x -axis, (b) the y -axis.
- 8 A glass bowl is formed by rotating about the y -axis the region between the graphs of $y = x^2$ and $y = x^3$. Find the volume of glass in the bowl.
- 9 The region enclosed by both axes, the line $x = 2$ and the curve $y = \frac{1}{8}x^2 + 2$ is rotated about the y -axis to form a solid. Find the volume of this solid.

Miscellaneous exercise 17

- 1 The region bounded by the curve $y = x^2 + 1$, the x -axis, the y -axis and the line $x = 2$ is rotated completely about the x -axis. Find, in terms of π , the volume of the solid formed.

