Practice worksheet | Integration techniques and applications

Volumes of revolution about either coordinate axis

Name: _____ Date: _____

6 questions | 12 marks

1. Rotate $0 \leq x \leq 1$, $0 \leq y \leq x^2$ about the x axis. [2 marks]

2. Rotate $0 \leq x \leq \sqrt{2}$, $x^2 \leq y \leq 2$ about the x axis. [2 marks]

3. Rotate $0 \leq y \leq 3$, $0 \leq x \leq y$ about the y axis. [2 marks]

4. Rotate $1 \leq x \leq 2$, $1 \leq y \leq x$ about the x axis. [2 marks]

5. Rotate the rectangle $1 \leq x \leq 2$, $0 \leq y \leq 3$ about the y axis. [2 marks]

6. The region under $y = kx$ from $x = 0$ to 1 is rotated about the x axis, with $k > 0$. If volume is 12π, find k. [2 marks]