

Worksheet 6.2

Full Name: _____ Score: _____

1. Sketch the region enclosed by the graphs of the given equations. Then, use a definite integral to find the exact value of the volume of revolution obtained by rotating the region about the given axis of revolution.

(a) $y = x^2$, $y = 9x$, about $y = -1$

(b) $y = x^2$, $y = 9x$, about the y -axis

(c) $y = x$, $y = x + 2$, $x = 0$, $x = 4$ about the $y = -3$

(d) $y = 4x$, $y = 4x^2 - x^3$ about the $y = -1$

(e) $y = e^x$, $y = 0$, $x = 1$, $x = 2$ about $y = -2$

(f) $y = \ln x$, $y = 0$, $x = 2$, about $x = -1$

(g) $y = \frac{1}{\sqrt{x}}$, $y = 0$, $x = 2$, $x = 6$ about the x -axis

(h) $y = \frac{\ln x}{\sqrt{x}}$, $y = 0$, $x = 2$, about the x -axis