

CALCULUS I – Worksheet #33

1. Find the area between $y = x^3$ and $y = 3x^2$.

For problems 2-7, find the volumes when the areas bounded by the following curves are revolved about the given axis.

2. $y = \sqrt{x}$, $x = 4$, $y = 0$	x-axis	3. $y = x - x^2$, $y = 0$	x-axis
4. $y = x^4$, $y = x$	y-axis	5. $y = x^3$, $y = 1$, $x = 0$	y-axis
6. $y = \sqrt{x}$, $y = x^2$	x-axis	7. $y = \frac{1}{\sqrt{1+x^2}}$, $x = 1$, $x = -1$, $y = 0$	x-axis

8. $\int_1^{e^2} x^2 \ln 3x \, dx$

9. $\int 3x \cos 2x \, dx =$

For Problems 10 – 12: $\int_{-1}^0 f(x) \, dx = -2$ $\int_0^1 f(x) \, dx = 1$ $\int_{-1}^0 g(x) \, dx = 3$
 $\int_{-1}^1 g(x) \, dx = 7$ $\int_{-1}^1 h(x) \, dx = 5$ $\int_0^1 h(x) \, dx = 11$

10. $\int_0^1 g(x) \, dx$ 11. $\int_{-1}^0 2g(x) - f(x) \, dx$ 12. $\int_0^{-1} h(x) \, dx$
