

Section 6-2 : Area Between Curves

1. Determine the area below $f(x) = 3 + 2x - x^2$ and above the x -axis.

2. Determine the area to the left of $g(y) = 3 - y^2$ and to the right of $x = -1$.

For problems 3 – 11 determine the area of the region bounded by the given set of curves.

3. $y = x^2 + 2$, $y = \sin(x)$, $x = -1$ and $x = 2$

4. $y = \frac{8}{x}$, $y = 2x$ and $x = 4$

5. $x = 3 + y^2$, $x = 2 - y^2$, $y = 1$ and $y = -2$

6. $x = y^2 - y - 6$ and $x = 2y + 4$

7. $y = x\sqrt{x^2 + 1}$, $y = e^{-\frac{1}{2}x}$, $x = -3$ and the y -axis

8. $y = 4x + 3$, $y = 6 - x - 2x^2$, $x = -4$ and $x = 2$

9. $y = \frac{1}{x+2}$, $y = (x+2)^2$, $x = -\frac{3}{2}$, $x = 1$

10. $x = y^2 + 1$, $x = 5$, $y = -3$ and $y = 3$

11. $x = e^{1+2y}$, $x = e^{1-y}$, $y = -2$ and $y = 1$

