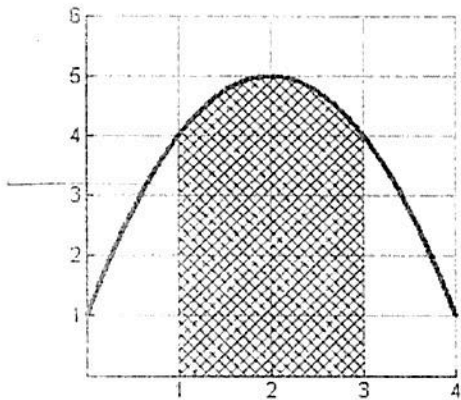


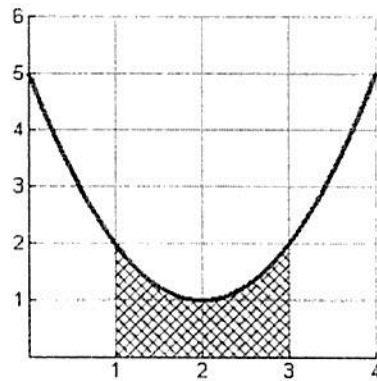
## 7.1 Area of a Region Between Two Curves

Area

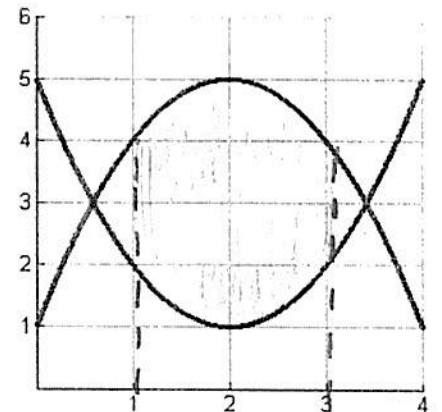
1) Find the area of the region bounded by  $y = x^2$ ,  $y = 0$ ,  $x = 1$  and  $x = 3$ .

Area of a Region Between Two Curves

$$y = -(x - 2)^2 + 5$$



$$y = (x - 2)^2 + 1$$

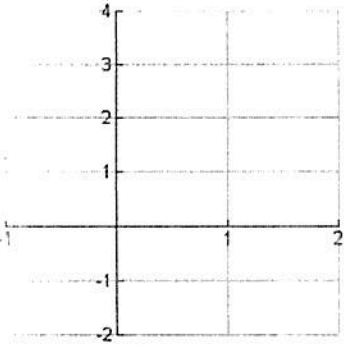


2)a) How would you find the area of the shaded region of each of these functions?

b) How would you find the area of the region between the two functions from  $x = 1$  to  $x = 3$ ?

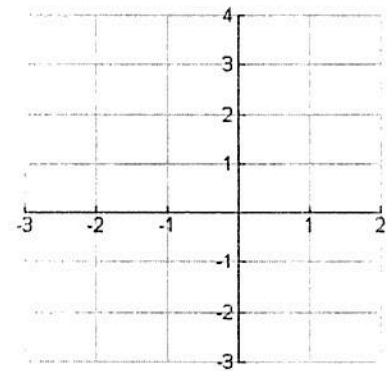
**NO Calculator!**

3) Find the area of the region bounded by the graphs of  $y = x^2 + 2$ ,  $y = -x$ ,  $x = 0$  and  $x = 1$ .

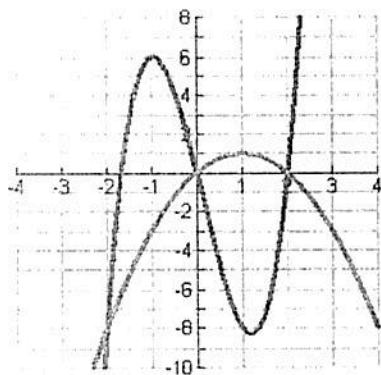


**Area of a Region Between Intersecting Curves**

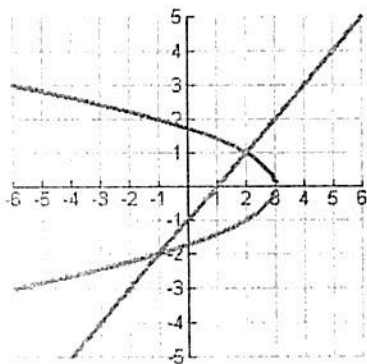
4) Find the area of the region bounded by the graphs of  $f(x) = 2 - x^2$  and  $g(x) = x$ .



- 5) Find the area of the region between the graphs of  $f(x) = 3x^3 - x^2 - 10x$  and  $g(x) = -x^2 + 2x$ .



- 6) Find the area of the region bounded by the graphs of  $x = 3 - y^2$  and  $x = y + 1$ .



**Calculator**

7) Find the area of the region bounded by the graphs of  $f(x) = -x^2 + 4x + 1$  and  $g(x) = x + 1$ .

8) Find the area of the region bounded by the graphs of  $f(x) = x^4 - 4x^2$  and  $g(x) = x^2 - 4$ .