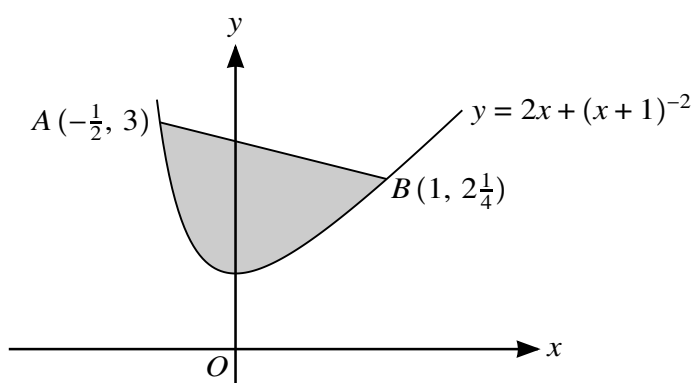


10 The function f is defined by $f(x) = 2x + (x + 1)^{-2}$ for $x > -1$.

- (i) Find $f'(x)$ and $f''(x)$ and hence verify that the function f has a minimum value at $x = 0$. [4]



The points $A(-\frac{1}{2}, 3)$ and $B(1, 2\frac{1}{4})$ lie on the curve $y = 2x + (x + 1)^{-2}$, as shown in the diagram.

- (ii) Find the distance AB . [2]
- (iii) Find, showing all necessary working, the area of the shaded region. [6]