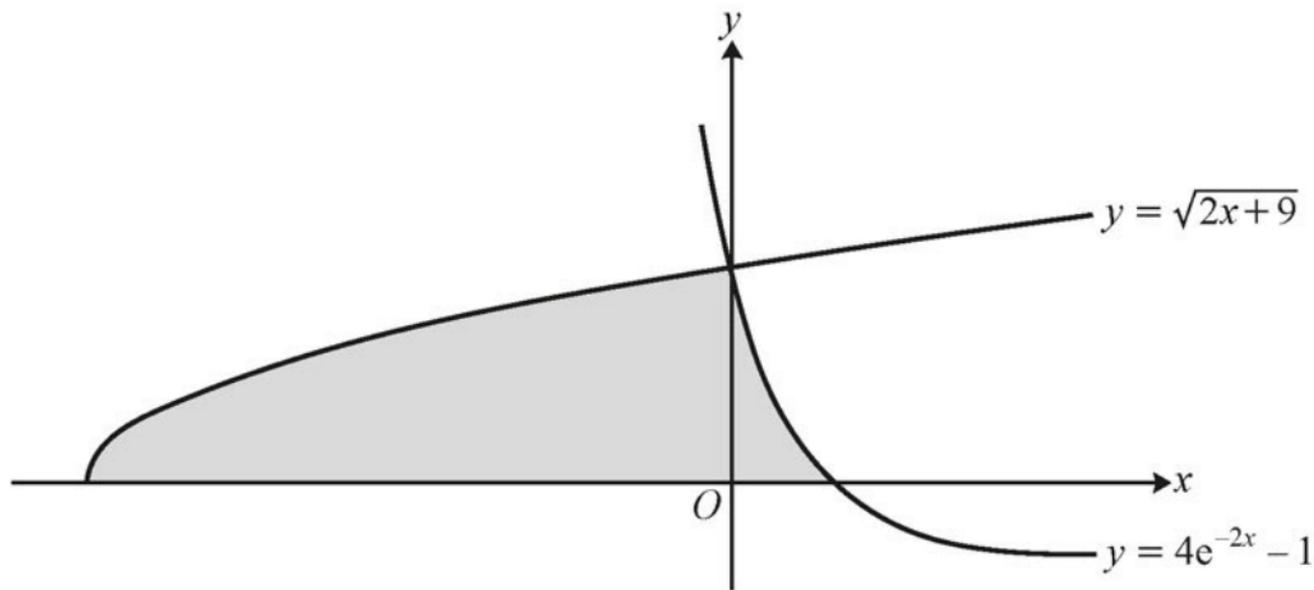


6 In this question you must show detailed reasoning.



The diagram shows the curves  $y = \sqrt{2x+9}$  and  $y = 4e^{-2x} - 1$  which intersect on the  $y$ -axis. The shaded region is bounded by the curves and the  $x$ -axis.

Determine the area of the shaded region, giving your answer in the form  $p + q \ln 2$  where  $p$  and  $q$  are constants to be determined.

[8]