

1. Nov/2022/Paper\_9709\_21/No.6(b)

(b) Hence find  $\int_2^{12} \left( \frac{p(x)}{4x-3} - 3x^2 \right) dx$ , giving your answer in the form  $a + \ln b$ . [6]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

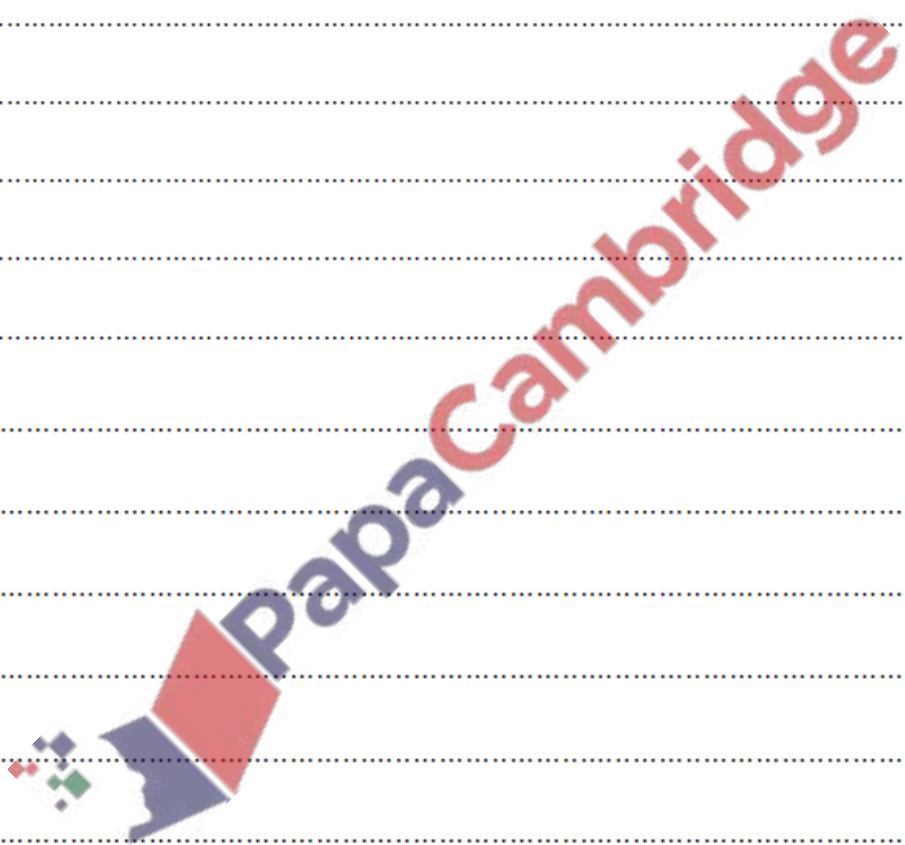
.....

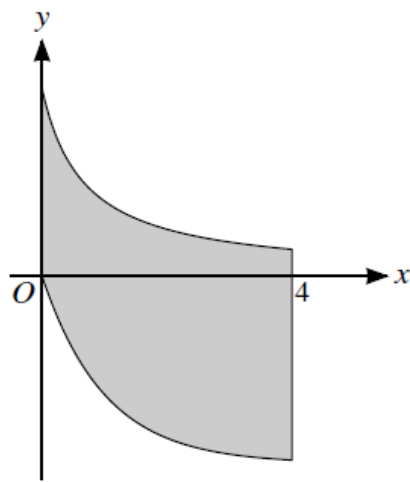
.....

.....

.....

.....





The diagram shows the curves  $y = \frac{6}{3x+2}$  and  $y = 3e^{-x} - 3$  for values of  $x$  between 0 and 4. The shaded region is bounded by the two curves and the lines  $x = 0$  and  $x = 4$ .

Find the exact area of the shaded region, giving your answer in the form  $\ln a + b + ce^d$ . [9]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

