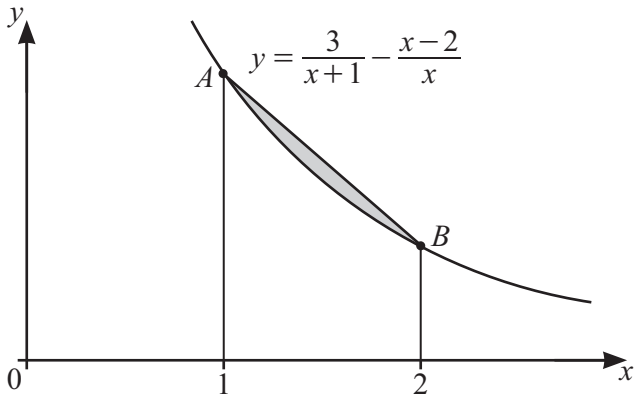
8



The diagram shows part of the curve $y = \frac{3}{x+1} - \frac{x-2}{x}$.

The points A and B lie on the curve such that the x-coordinate of A is 1 and the x-coordinate of B is 2.

(a) Find the y-coordinates of A and B. [1]

(b) Show that the area of the shaded region enclosed by the line AB and the curve is $\frac{a}{4} - \ln\frac{b}{2}$, where a and b are integers to be found. [7]

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9 The function f is defined by $f(x) = -2x^2 + 9x - 10$ for $0 \leqslant x \leqslant 3$.

(a) (i) Write $f(x)$ in the form $a + b(x + c)^2$ where a, b and c are constants. [3]

(ii) Hence determine whether or not f^{-1} exists. [2]

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