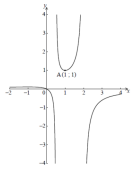
IB Functions Problem 007



$\frac{x}{-2x^2+5x-2}$, for $-2 \le x \le 4$, $x \neq \frac{1}{2}$, $x \neq 2$, as shown below.

The curve has a local minimum at $A(1; 1)$ and a local maximum at B.

A. Use the quotient rule to show that $f'(x) = \frac{2x^2-2}{(-2x^2+5x-2)^2}$.

B. Hence find the coordinates of B.

C. Given that the line $y = k$ does not meet the curve of f, find the possible values of k.