6 A function f is defined by $\mathrm{f}(x) = \dfrac{x}{\sqrt{2x-2}}$

6 (a) State the maximum possible domain of f.

[2 marks]

6 (b) Use the quotient rule to show that $\mathrm{f}'(x) = \dfrac{x-2}{(2x-2)^{\frac{3}{2}}}$

[3 marks]

6 (c) Show that the graph of $y = \mathrm{f}(x)$ has exactly one point of inflection.

[7 marks]

6 (d) Write down the values of x for which the graph of $y = \mathrm{f}(x)$ is convex.

[1 mark]