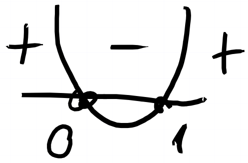
$\ln(x^2 - x) = 0$

$x^2 - x > 0 \iff x(x-1) > 0$



$\Rightarrow D =]-\infty ; 0[\cup]1 ; +\infty[$

$\ln(x^2 - x) = 0 \iff x^2 - x = 1$

$x^2 - x - 1 = 0$

$\Delta = 1 + 4 = 5$

$x_1 = \dfrac{1 + \sqrt{5}}{2}$ $\qquad$ $x_2 = \dfrac{1 - \sqrt{5}}{2}$

$$S = \left\{ \frac{1-\sqrt{5}}{2} ; \frac{1+\sqrt{5}}{2} \right\}$$

Verifier :

$$\ln\left(\left(\frac{1+\sqrt{5}}{2}\right)^2 - \left(\frac{1+\sqrt{5}}{2}\right) \right) =$$

$$= \ln\left(\frac{1 + 5 + \cancel{2\sqrt{5}} - 2 - \cancel{2\sqrt{5}}}{4} \right) = \ln\left(\frac{4}{4}\right) = \ln(1) = 0$$

$\Rightarrow$ OK