

Answer on Question #78901 – Math – Calculus

Question

The domain of the function f , given by $f(x) = \sqrt{\frac{2-x}{x}}$ is $[0,1]$

Is the statement true or false? Give reason in support of your answer.

Solution

The domain of the function f is determined from

$$\begin{cases} \frac{2-x}{x} \geq 0 \\ x \neq 0 \end{cases}$$

$$\begin{cases} 2-x \geq 0 \\ x \neq 0 \end{cases}$$

$$\begin{cases} x \leq 2 \\ x > 0 \end{cases}$$

So, we have that the domain of the function f is $(0,2]$.

Answer:

The statement is false. The domain of the function f is $(0,2]$.