

Answer on Question #48698 – Math – Algebra

The equation

$$1 - x/x = x$$

has two real solutions. They are ?

Solution:

Initial equation:

$$\frac{1 - x}{x} = x$$

When we multiply both sides by x , we get

$$1 - x = x^2$$
$$x^2 + x - 1 = 0$$

Roots of the quadratic equation are calculated by the following formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}; \text{ where } a = 1; b = 1; c = -1$$

$$x = -\frac{1}{2} \pm \frac{\sqrt{5}}{2}$$

Answer: $x = -\frac{1}{2} - \frac{\sqrt{5}}{2}, x = -\frac{1}{2} + \frac{\sqrt{5}}{2}.$