Answer on Question #48005 – Math – Algebra

1. $x^{\frac{3}{4}} - 7x^{\frac{1}{4}} = 0$. Find the real solutions to the equation.

Solution.

At first, we will rewrite the initial equation in the next form:

$x^{\frac{1}{4}}(x^{\frac{1}{2}} - 7) = 0.$

To satisfy equation, we have

$x^{\frac{1}{4}} = 0$, hence $x = 0$;

or

$\sqrt{x} - 7 = 0,$

$\sqrt{x} = 7$, hence $x = 49$, because x is non-negative due to the domain of square root.

And finally we obtain $x_1 = 0, x_2 = 49.$

Answer:

Real solutions of equation are $x_1 = 0$ and $x_2 = 49.$