

**Question:**

What is the normality of M/2 solution of H<sub>3</sub>PO<sub>4</sub>?

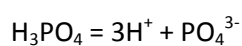
**Answer:**

The molarity is related to normality in the following way:

$C = f \times N$ , where C is molarity, N is normality and f is an equivalence factor.

For H<sub>3</sub>PO<sub>4</sub> the factor of equivalence is defined as

$f = \frac{1}{n}$ , where n is for the number of protons H<sup>+</sup> resulted from the dissociation of H<sub>3</sub>PO<sub>4</sub>.



n = 3, therefore:

$$f = \frac{1}{n} = \frac{1}{3};$$

$$N = \frac{C}{f} = \frac{0.5M}{\frac{1}{3}} = 3 \times 0.5M = 1.5M$$