

Answer on Question #51014 – Physics – Mechanics | Kinematics | Dynamics

1. If s is distance and t is time, what must be the dimensions of a and b in the equation $s=asin(bt)$?

Solution.

Sinus has no dimensions. So, the dimension of s and a must be identical: $[a] = [s] = m$.

The argument of sinus function is dimensionless, so the dimension of b must be as the dimension of $1/t$: $[b] = [t^{-1}] = s^{-1}$.

Answer: $[a] = m$, $[b] = s^{-1}$.