The displacement of a particle S in a time, t is given by $S = A + Bt + Ct^2$, deduce the units of the constants A, B and C appearing in the equation.

Solution:

The unit of the displacement is meter [m] and unit of the time is second [s], so

$$[m] = [A] + [B][s] + [C][s^2].$$

Finally, the units of the constants A, B and C

$$[A] = [m], \qquad [B] = \left[\frac{m}{s}\right], \qquad [C] = \left[\frac{m}{s^2}\right].$$

Answer: $[A] = [m],\ [B] = \left[\frac{m}{s}\right],\ [C] = \left[\frac{m}{s^2}\right]$