Answer on Question #41187, Physics, Mechanics | Kinematics | Dynamics

Question:

A wave is represented by y=asin(At-Bx+C);(A,B,C=Constants).The dimensions of aBC/A are as those of-

A)Velocity

B)Length

C)Mass

D)Time

Answer:

The dimension of amplitude of wave a is meter. At, Bx and C are dimensionless, therefore dimensions of A and B are:

$$[A] = \frac{1}{s}$$

$$[B] = \frac{1}{m}$$

Therefore:

$$\left[\frac{aBC}{A}\right] = \left[\frac{m \cdot \left(\frac{1}{m}\right)}{\frac{1}{s}}\right] = s$$

Second is dimension of time.

Answer: D)Time