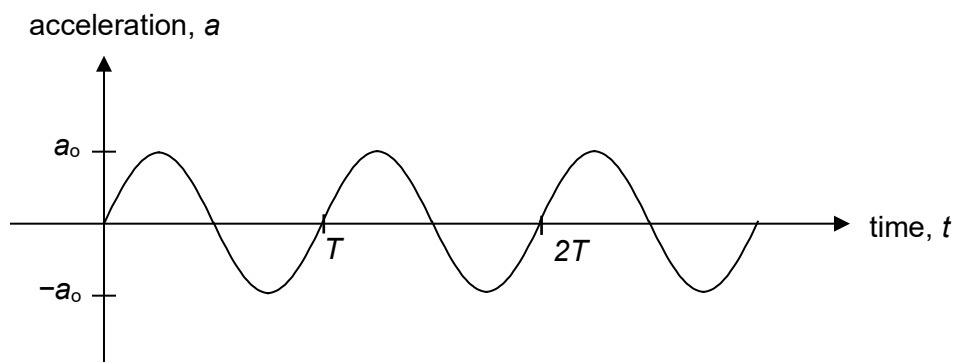8 A particle undergoes simple harmonic motion with period T. The variation with time of its acceleration is shown below.

What is the particle's displacement, in terms of its amplitude x_0, at time $\dfrac{T}{3}$?

A −0.87x_0

B −0.50x_0

C 0.50x_0

D 0.87x_0