

- 15** A vertical spring-mass system has a natural period of 1.25 s. A periodic force with frequency of 2.50 Hz is then applied to the system such that it oscillates with amplitude of 1.5 cm and reaches a steady state. The mass is observed to be at the bottom amplitude position at time $t = 0$.

What is the speed and direction of movement of the mass after 0.15 s?

	speed / ms^{-1}	direction of movement
A	0.111	downwards
B	0.167	downwards
C	0.111	upwards
D	0.167	upwards