8.   (a)   Two identical sound sources A and B which emit sound waves with frequency 256Hz are initially side by side together with a stationary observer. Source A remains stationary with respect to the observer, while source B accelerates from rest with a constant acceleration of 0.5 ms^{-2} until it reaches a point P. After this, B continues to move with a constant velocity that it attains at the point P. When this happens, the observer finds that the frequency of sound coming source B differs from that from source A by 8 Hz. What is the distance of the point P from the observer? [Speed of sound waves in air $= 330$ ms^{-1}]   [5 marks]