2.   (a)   A wire is mounted on a sounding board and has a tension of F_1. When it
is set into vibration in the fundamental mode, the sound waves produce a
beat with frequency 5 Hz with a 256-Hz tuning fork. When the tension in
the wire is increased to F_2, the beat frequency produced by the sound
waves in the fundamental mode becomes 3 Hz with the tuning fork. Find
the ratio $\dfrac{F_2}{F_1}$.

$[\frac{F_2}{F_1} = \left(\frac{259}{251}\right)^2 = 1.065 \ or \ \left(\frac{253}{251}\right)^2 = 1.016 \ ]$

[4 marks]