

You get pulled over for running a red light. You explain to the police officer that the light appeared green to you due to the Doppler effect. The police officer writes you a ticket for speeding instead. The fine is \$100 for every 10km/hr over the speed limit of 60km/hr you were traveling. How much is the speeding ticket?

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**Things to know for Chapter 15:**

- You should understand the physics phenomena described by the equation:  $v = \sqrt{\frac{T}{\mu}}$
- You should be able to draw snapshot and history graphs that describe a physical phenomenon.
- You should be able to use all parts of the equation  $D(x,t) = A \sin(kx - \omega t + \phi_0)$  to describe a traveling wave.
- You should be able to identify which of the below Doppler equations to use and determine which is the appropriate sign for a physical situation.

$$f = f_o \frac{(1 \pm \frac{v_o}{v})}{(1 \mp \frac{v_s}{v})} \quad \lambda = \lambda_o \sqrt{\frac{1 \pm \frac{v_s}{c}}{1 \mp \frac{v_s}{c}}}$$