Q: A transverse wave pulse that with

$$y = \frac{4}{x^2 + 2}$$

is described At $t = 0$, a stretched string starts.

a) If this tape moves with a speed of $2.5\frac{m}{s}$ in the negative x direction, write its display function.
b) Plot the temperature at $t = 0$, $t = 2$, and $t = 5\ s$.

Sol:

a)

$$y(x,t) = \frac{4}{(x + 2.5t)^2 + 2}$$

b)

$$\begin{cases} t = 0 \rightarrow y(x,0) = \dfrac{4}{x^2 + 2} \\ t = 2 \rightarrow y(x,2) = \dfrac{4}{(x+5)^2 + 2} \\ t = 5 \rightarrow y(x,5) = \dfrac{4}{(x+12.5)^2 + 2} \end{cases}$$