7–8 Two points on a string are observed as a traveling wave passes them. The points are at $x_1 = 0$ and $x_2 = 1$ m. The transverse motions of the two points are found to be as follows:

$$y_1 = 0.2 \sin 3\pi t$$
$$y_2 = 0.2 \sin(3\pi t + \pi/8)$$

(a) What is the frequency in hertz?

(b) What is the wavelength?

(c) With what speed does the wave travel?

(d) Which way is the wave traveling? Show how you reach this conclusion.

(*Warning*! Consider carefully if there are any ambiguities allowed by the limited amount of information given.)