IS IT A WAVE?

$$y = (8\text{mm})\sin\left[(30\text{s}^{-1})t + 0.3\right]$$

a) Yes
b) No

No! It's an oscillation
(No x variable)

$$y = (8\text{mm})\sin\left[(30\text{cm}^{-1})x + 0.3\right]$$

a) Yes
b) No

No! It's a curvy line.
(No t variable)

$$y = x \sin\left[(30 \text{cm}^{-1})(x - \left(2\frac{\text{m}}{\text{s}^2}\right)t^2) + 0.3 \right]$$

a) Yes
b) No

No!
- Speed [$(2\text{m/s}^2)t$] increases with time
- Amplitude gets bigger with x.

$$y = (8\text{mm})\sin\left[(30\text{cm}^{-1})x - (20\text{s}^{-1})t + 0.3\right]$$

a) Yes

b) No

YES!

$$y = (8\text{mm})\sin\left[(30\text{cm}^{-1})\left(x - (\frac{20cm}{30s})t\right) + 0.3\right]$$