

Wave:

$$D(x, t) = (3.5 \text{ cm}) \sin(2.7x - 124t)$$

x in m & t in s.

General form: $D = A \sin(kx - \omega t)$

So: $k = 2.7 \text{ rad/m}$ & $\omega = 124 \text{ rad/s}$

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$$a.) \lambda = \frac{2\pi}{k} = \underline{2.327 \text{ m}}$$

$$f = \frac{\omega}{2\pi} = \underline{19.74 \text{ Hz}}$$

$$b.) v = \lambda f = \frac{\omega}{k} = \underline{45.92 \text{ m/s}}$$

c.) For $x = 5.2 \text{ m}$ & $t = 3.6 \text{ s}$

$$\begin{aligned} D(x, t) &= (3.5 \text{ cm}) \sin(2.7(5.2) - 124(3.6)) \\ &= \underline{3.256 \text{ cm}} \end{aligned}$$

If you got -3.335 cm , you forgot to change your calculator to radians!