## Metropolitan University

PHY 111: Physics I

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## ASSIGNMENT-CHAPTER 18

**CSE 54** 

1-a) we know that
$$f = \frac{\sqrt{1-a}}{\sqrt{1-a}}$$

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$$= \frac{243 \text{ m/s}}{\sqrt{1-a}}$$

$$= \frac{243$$

2-9 In 30s the boat performs 12 oscillation. The frequency of wave is  $f = \frac{12}{303}$ = 0.4 Hz. (2-b) Wave wave crest reaches shove 15m away in 5.0s speed of the wave is v = 15m

$$(2-C) we know that,$$

$$\int = \frac{V}{f}$$

$$= \frac{3 \text{ m/s}}{0.40 \text{ Hz}}$$

= 7.5 m.

given,
$$V = 3 m/s$$

$$f = 0.40 Hz$$

- .: The Wavelength of the waves is 7.5 m.
- (3-a) The time for a particular point +6 move from maximum displacement +0 zero displacement is 178ms.

: The period  $T = 9 \times 178 \text{ ms}$ = 7.12 ms = 0.7125.

3-b) we know that,
$$f = \frac{1}{T}$$

$$= \frac{1}{0.712s}$$

$$= 1.40 \text{ Hz}$$

.. The trequency is 1.40 Hz

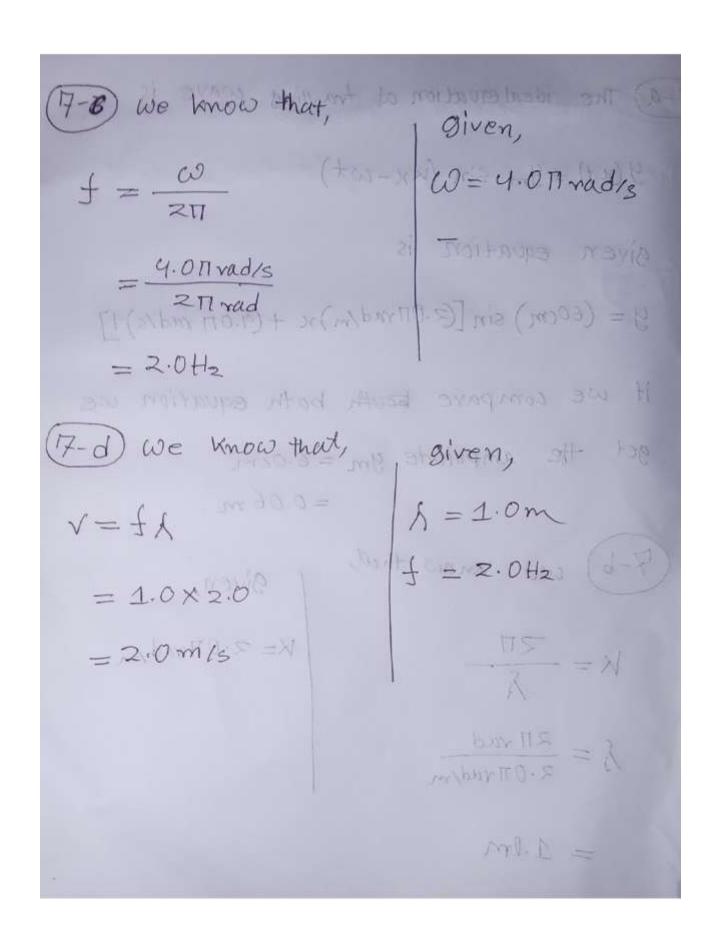
$$= 1.90 H_2 \times 1.38 m$$

$$= 1.932 m/s$$

: The Speed of wave is 1.932 m/s.

 $\mathcal{J} = f S \qquad \qquad f = 1.40 H_2$ 

(7-a) The ideal equation of traveling wave is y (x,t) = ym sin (xx-wt) given equation is y = (6.0cm) sin [(2.011 rad/m) x + (9.011 rad/s)+7 if we compare booth both equation we get the amplitude ym = 6.0cm 300 (6) 10.1= = 0.06 m. 1= V (7-6) we know that K = -211  $S = \frac{211 \text{ rad}}{3.011 \text{ rad/m}}$ = 1.Pm



17-e) The second term is positive so The wave is moving in the -x direction.