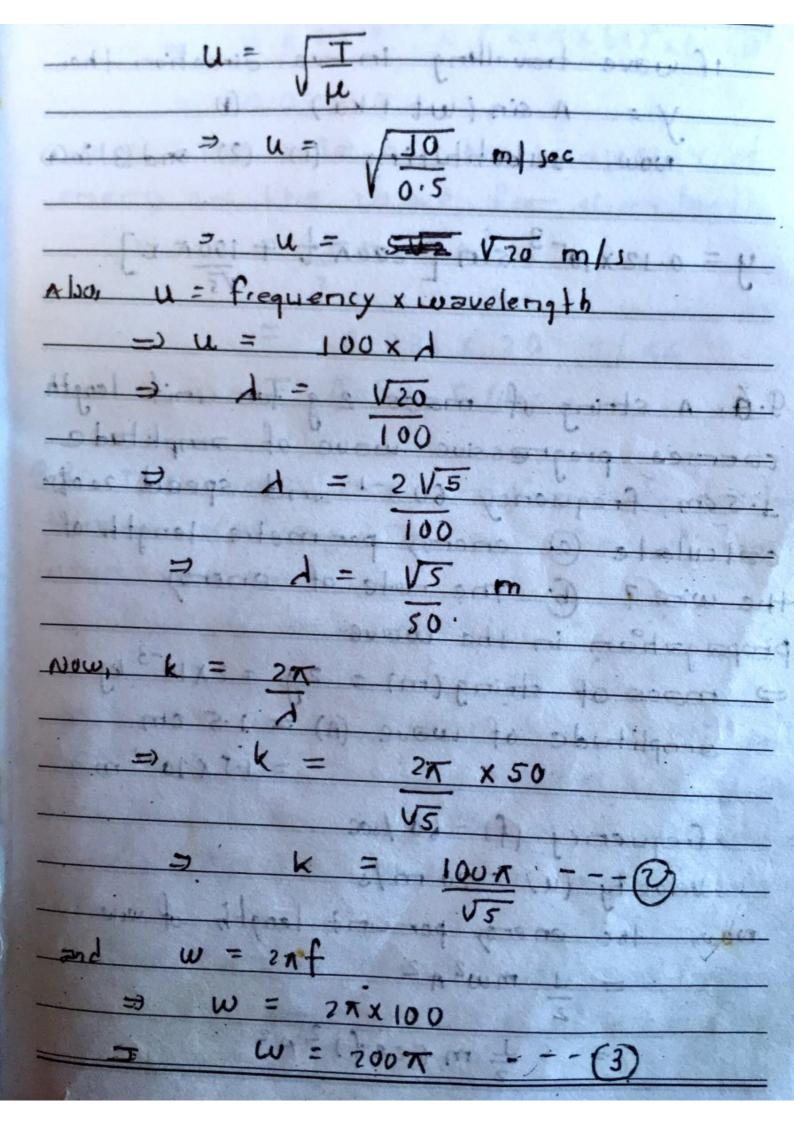
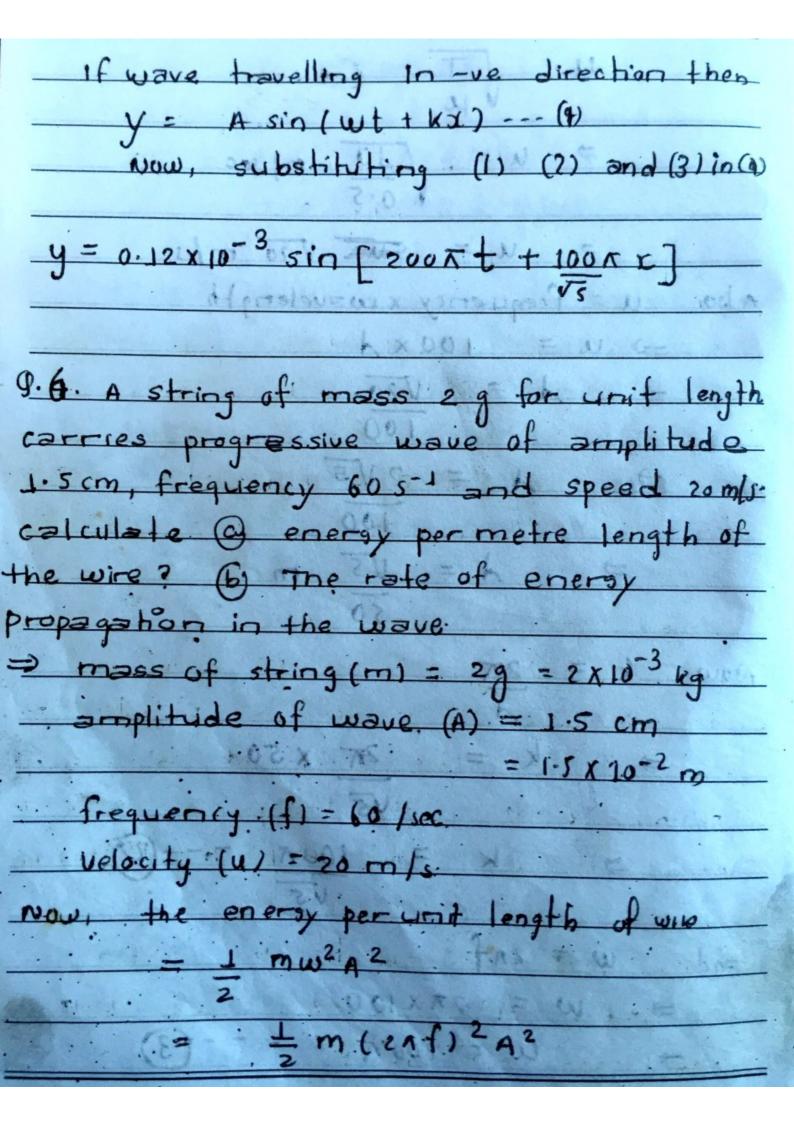
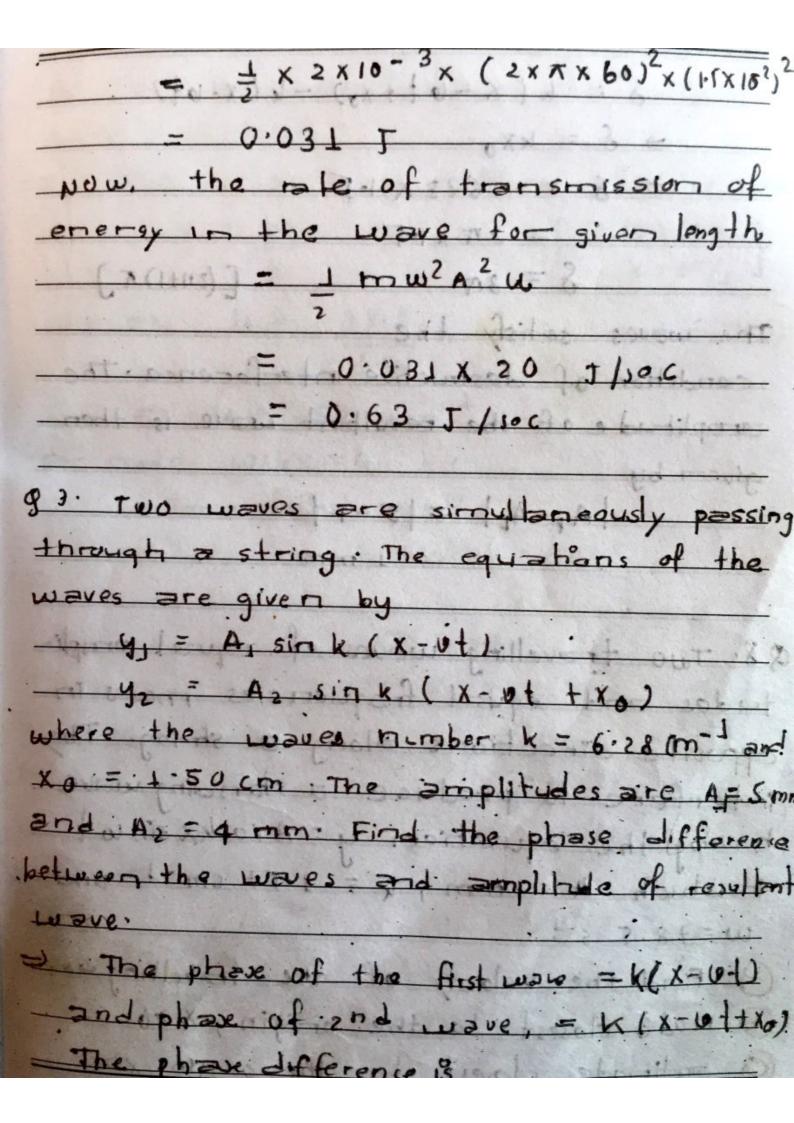


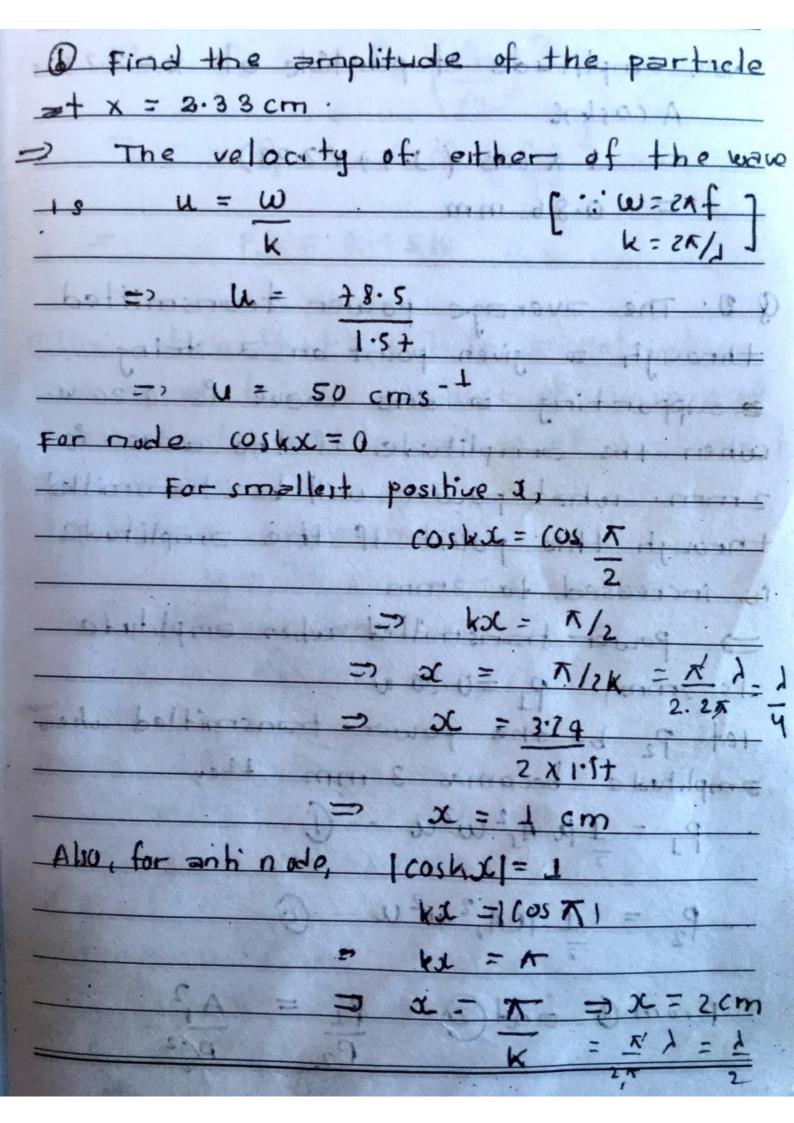
= f = 30 cycle per sec
was welouty (1) = fd
- (10000 100 = 30 x 606.66
u= 1990. 8 cm/sec
- top our cextention of
95. A stretched string has a linear mass
density of so glam and a tension of 100
A wave on this string has an amplifude
of allemin and a frequency of 100 Hz
is travelling in -ve x direction. write the
wave equation with appropriate units.
=> linear mass density (M) = 5 g/cm
= 5x10-3 Lg/m
10-2
$\Rightarrow \mu = 0.5 \text{ kg/m}$
Tension (T) = 10N
smplitude (A) = 0.12 mm 7000
A = 0. 12 x 10-3 m
A = 0.00012 m (1)
frequency = 100 Hz
but the relocity of traverse wave
along stetched string

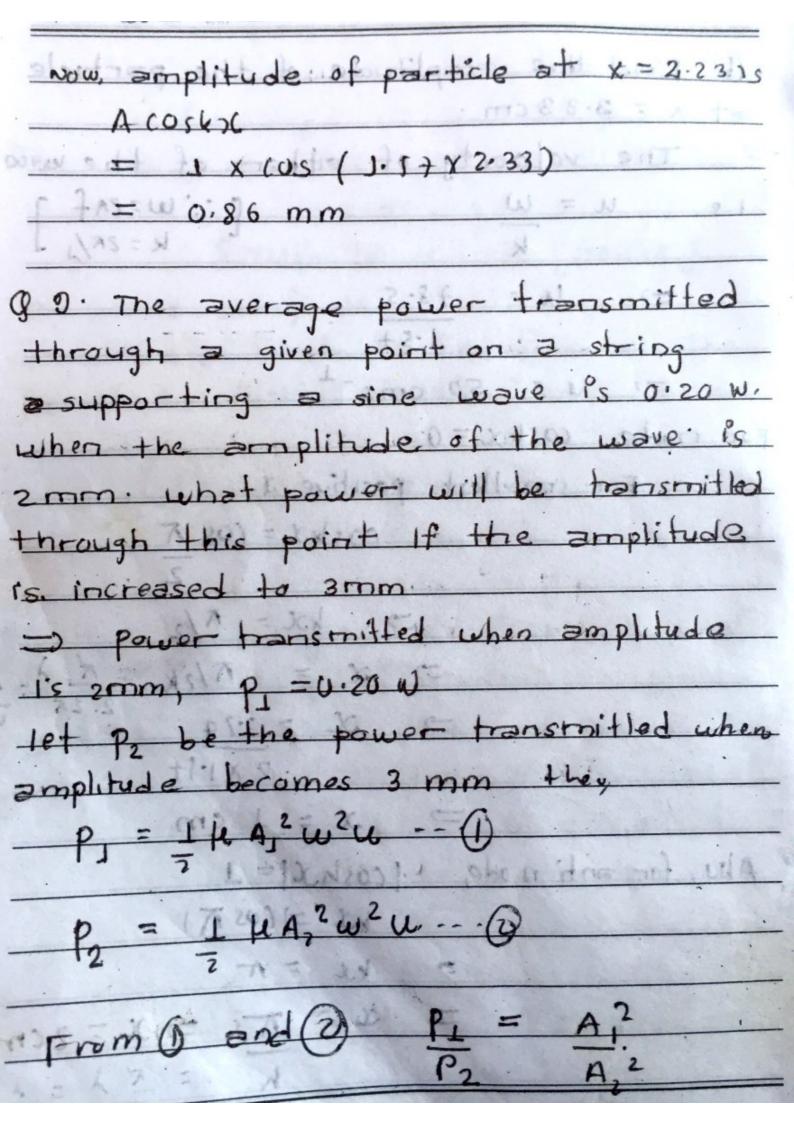


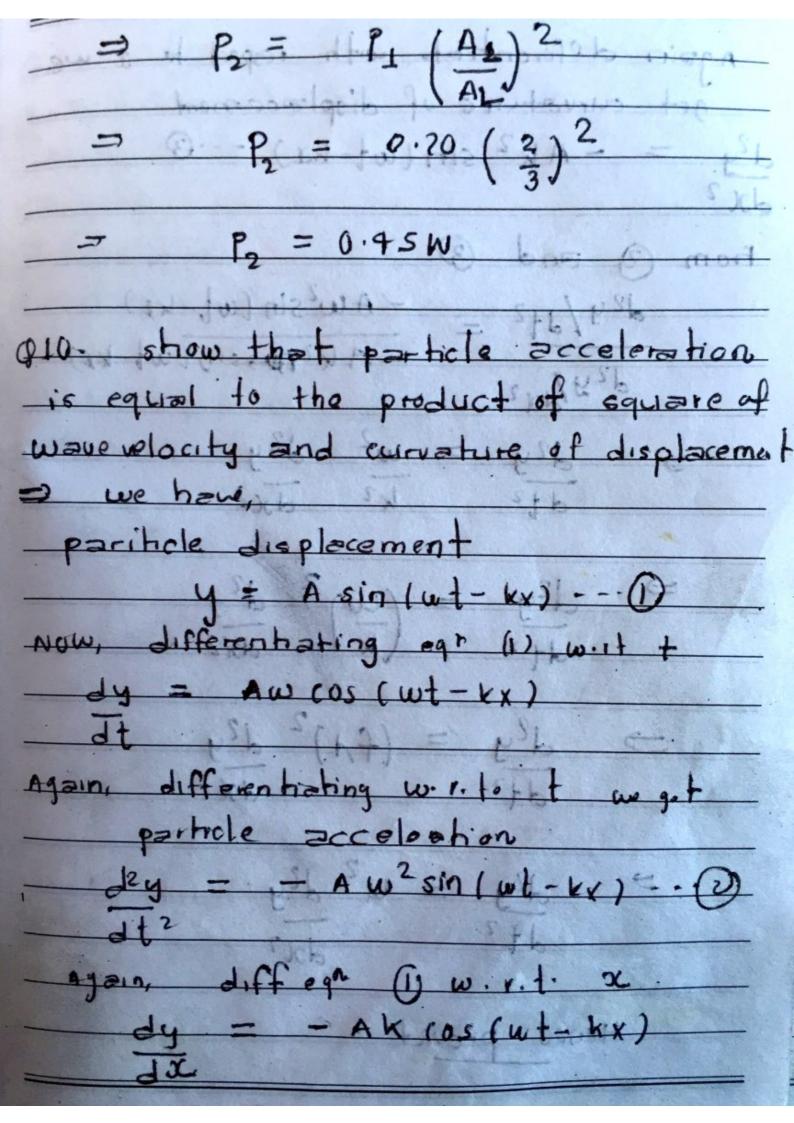




S= k(x-10+x0) -k(x-10+) => 8 = kx0 TIPO 10 = 8 = 6:28 XOI.5 uthoral made = 102x x1. The odd or years 8 = 13 M (2n+1) K) The waves satisfy the condition of destructive interference. The amplitude of the resultant wave is then given by (0122 9 V A P-A) = 5-4 / 200 W - 107 tour de steinin The conspins of the ha wife see sherm Q8. Two travelling waves of equal amplitudes and equal frequencies moves in opposite directions along a string. They interfere to produce a standing wave having the equation y = A coskx sin wt In which A = 1 mm, K = 1.57 cm-1 and. W = 78.5 5-1 @ Find the velocity of the travelling ware D node closest to the origin, x>0. @ antimode closest to the origin, xxx







Again deferentiate with respect to x we
get curvature of displacement
d2y = - Ak2 sin (wt-kx) 3
from @ and @
124/112 - + Aw2sin (wt-ks)
- A Kil Missiplant-KE)
The property of the design of
transplacement is
$\frac{1}{\sqrt{2}} \frac{1}{\sqrt{2}} = \left(\frac{1}{\sqrt{2}}\right)^2 \frac{1}{\sqrt{2}}$
(xx-fw) cooperA = ph
$\frac{1}{2} \frac{d^2y}{d^2y} = \left(\frac{f}{A}\right)^2 \frac{d^2y}{d^2y}$
- 1- w 1913 1 - on bushey x 2 ye reaches
2 12 12 12 12 12 12 12 12 12 12 12 12 12
deg = u deg
- dot?
Hence proved
13.7