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Latrol FFKG (Tutor)

1. a. Travelling wave adalah gelombang yang bergerak dengan kecepatan tertentu
Travelling wave → longitudinal wave dan transversal wave.

b. Diketahui : $A = 5\,m$
$v = 15\,cm/s = 0{,}15\,m/s$
$\lambda = 20\,cm = 0{,}2\,m$
persamaan gelombang?

$y = A\sin(kx \pm \omega t)$

~~$= 5\sin$~~ $f = \frac{v}{\lambda}$

$f = \frac{0{,}15}{0{,}2}$

$f = 0{,}75\,Hz$

$y = 5\sin(10\pi x \pm \frac{3}{2}\pi t)$

2. Diketahui : $f_s = 600\,Hz$
$v = 90\,km/jam = 25\,m/s$

a. f di depan mobil?

$f = \frac{343}{343-25} \cdot 600 \approx 647{,}17\,Hz$

b. f di belakang mobil?

$f = \frac{343-0}{343+25} \cdot 600 \approx 559{,}24\,Hz$

1. Diket : $v = 343\,m/s$ (ruang normal)
$B' = 2B$
$\rho' = \frac{1}{2}\rho$
$T_c = 253^\circ C$
$T_n = 20^\circ C$

Ditanya : $v' = ?$

$\frac{v'}{v} = \frac{\sqrt{\frac{B'}{\rho'}}}{\sqrt{\frac{B}{\rho}}}$

$\frac{v'}{343} = \frac{\sqrt{\frac{2B}{\frac{1}{2}\rho}}}{\sqrt{\frac{B}{\rho}}}$

$v' = 343\cdot\sqrt{4} = 686\,m/s$

$\frac{v'}{v} = \frac{\sqrt{1+\frac{273}{273}}}{\sqrt{1+\frac{20}{273}}}$

$\frac{v'}{343} = \frac{\sqrt{1+\frac{273}{273}}}{\sqrt{1+\frac{20}{273}}}$

$v' = 343\frac{\sqrt{2}}{\sqrt{1+\frac{20}{273}}}$

$v' \approx 460{,}23\,m/s$