



resultant

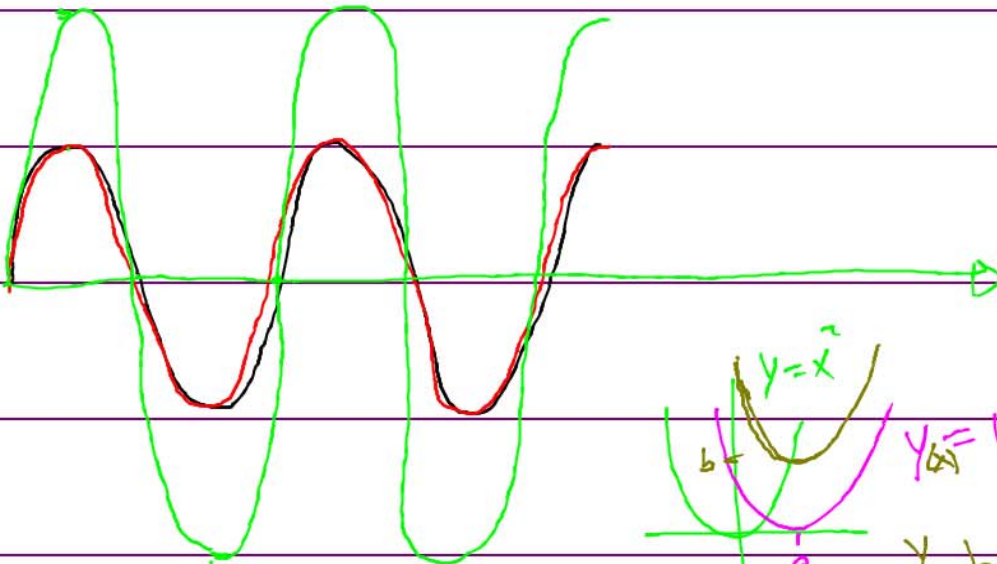
$$y_1 = 4(x - vt)$$

$$+ y_2 = 4(x + vt)$$

$$y_{res} = 8x \text{ A/p}$$

$$y_{res} = 8x = 0$$

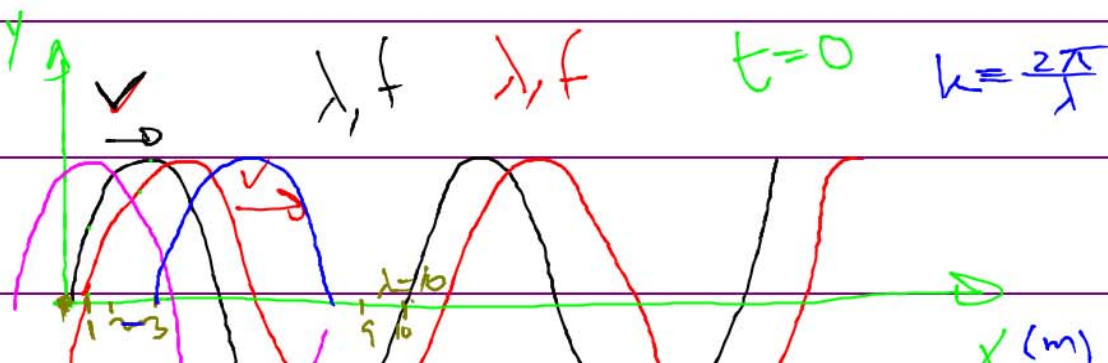
$x = 0$
 $t: \text{any time}$



$$y = x^2$$

$$y = (x-a)^2$$

$$y - b = (x-a)^2$$



$$\frac{|\Delta x|}{\lambda} = \frac{|\phi|}{2\pi}$$

$$Y_1(x,t) = A \sin(kx - \omega t + 0)$$

$$Y_2(x,t) = A \sin(kx - \omega t + \phi)$$

$$Y_2(x,t) = Y_1(x - \lambda, t)$$

$$Y_2(x,t) = A \sin(k(x - \lambda) - \omega t + 0)$$

$$= A \sin(kx - 3k - \omega t + 0) \quad \phi$$

$$Y_2(x,t) = A \sin(kx - \omega t - 0.628)$$

$$\phi = \frac{3\lambda}{10} = -0.628 \text{ radian}$$

$$Y_1 = A \sin(kx - \omega t)$$

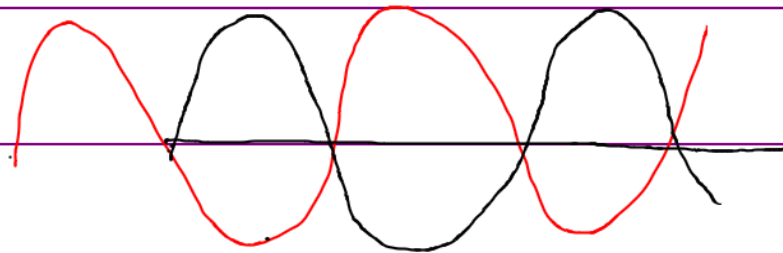
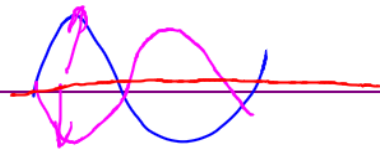
$$Y_2 = A \sin(kx - \omega t + \phi)$$

$$\phi = -\frac{1.9}{2.9}$$

$$Y_{res} = Y_1 + Y_2 = 2A \cos \frac{\phi}{2} \sin(kx - \omega t + \frac{\phi}{2})$$

$$\phi = 0 \Rightarrow Y_{res} = 2A \sin(kx - \omega t) = 2Y_1 = 2Y_2$$

$$\phi = \pi \Rightarrow Y_{res} = 0$$



$$\cos(\theta) = \sin(\theta + \frac{\pi}{2})$$

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$$y_{res} = y_1 + y_2$$

$$y_1 = 4 \sin(6x - 3t)$$

$$\sin(kx - \omega t)$$

$$y_2 = 4 \cos\left(6x - 3t + \frac{2\pi}{3}\right)$$

$$\sin(kx - \omega t + \phi)$$

$$\frac{2\pi}{3} \text{ rad} = 120^\circ$$

$$y_2 = 4 \sin\left(6x - 3t + \frac{7\pi}{6}\right)$$

$$\cos\left(6x - 3t + \frac{\pi}{3}\right) = \sin\left(6x - 3t + \frac{2\pi}{3} + \frac{\pi}{2}\right)$$

$$y_{res} = 8 \cos\left(\frac{7\pi}{12}\right) \sin\left(6x - \omega t + \frac{7\pi}{12}\right)$$

$$\frac{\pi}{6} (7)$$