**••8** Figure 16-32 shows the transverse velocity *u* versus time *t* of the point on a string at *x* = 0, as a wave passes through it. The scale on the vertical axis is set by *us* = 4.0 m/s. The wave has the generic form *y*(*x*, *t*) = *ym* sin (*kx* - ω*t +* φ). What then is φ? (*Caution:* A calculator does not always give the proper inverse trig function, so check your answer by substituting it and an assumed value of ω into *y*(*x*, *t*) and then plotting the function.)



Since then it reperesent a wave moving toward the +x-axis.

At x = and t = 0

----------------------- (1)



u = 0

u > 0

y(t)

u > 0

t

From the graph, the value of u at t = 0 is negative. From the above graph of possible y curves The blue is the correct one since it gives u <0 at t = 0 therefore y(0,0) < 0 and from equation (1) since sin(323)<0>