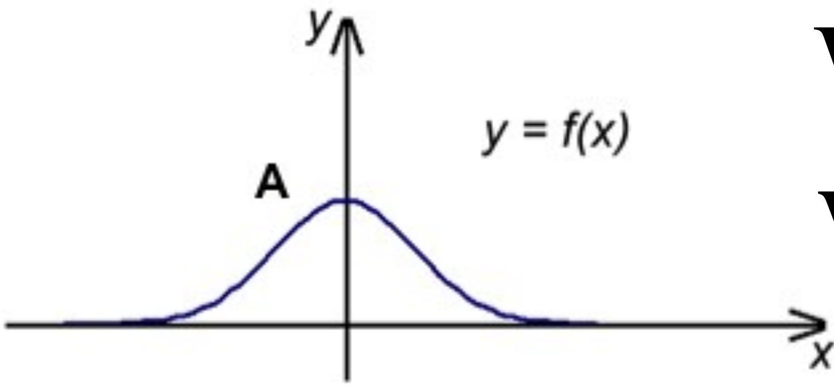
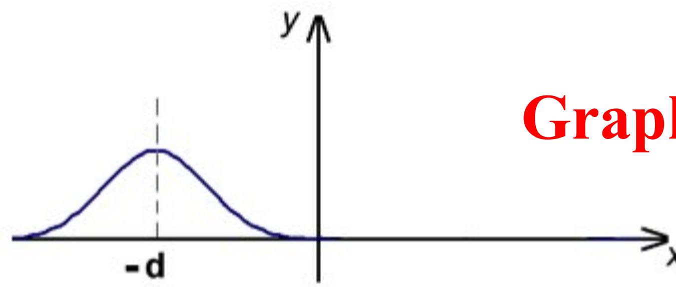
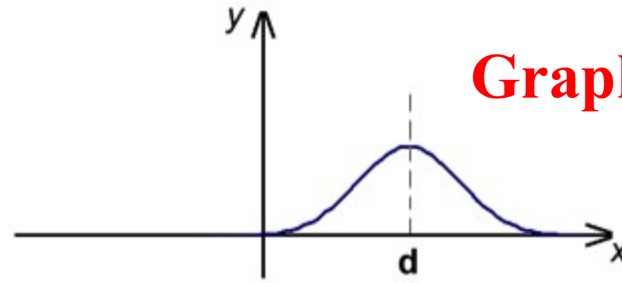
Which goes with which?



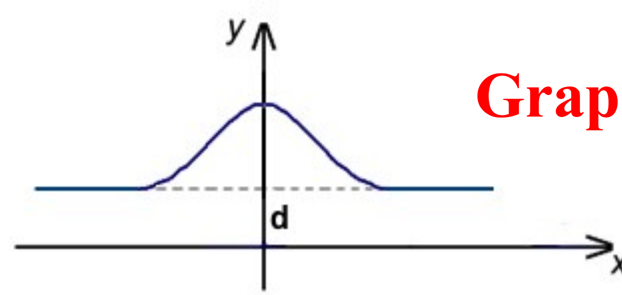
1. $y = f(x+d)$
2. $y = f(x-d)$
3. $y = f(x)+d$
4. $y = f(x)-d$
5. You can't tell if you don't know the form of f.
6. You can't tell for some other reason.



Graph I



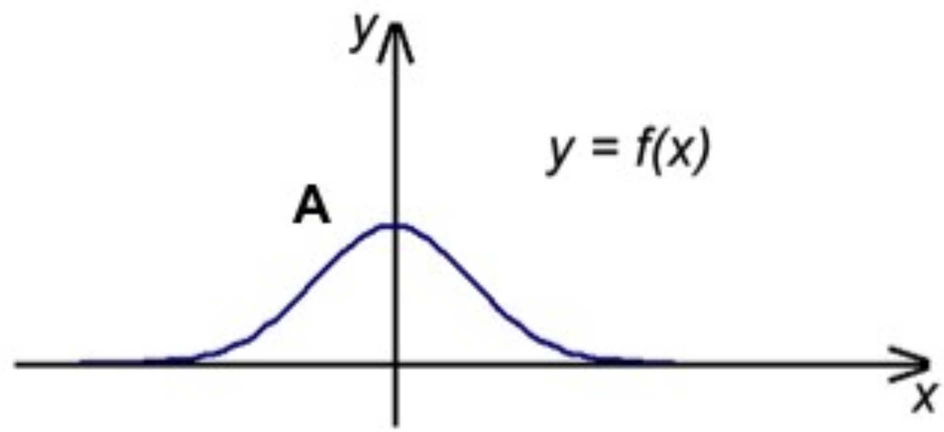
Graph II



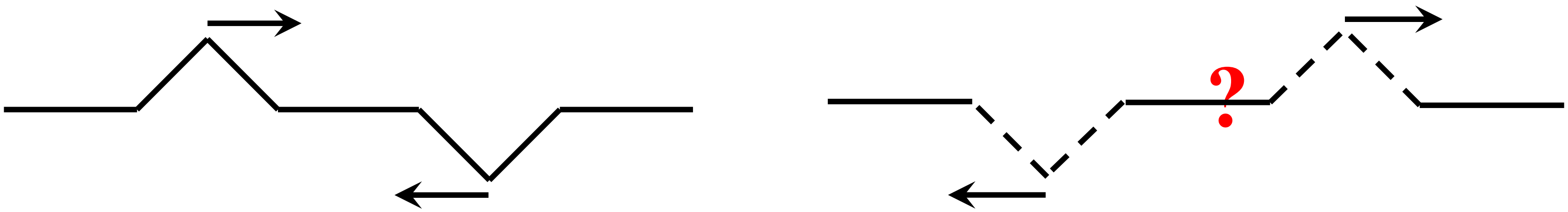
Graph III

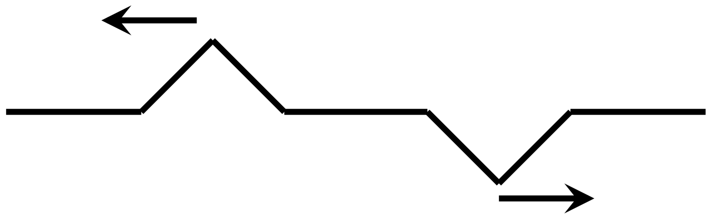
Suppose a pulse with the shape $y = f(x)$ at $t = 0$. Which equation correctly represents the pulse at the time t if it is moving in the positive direction with a speed v_0?

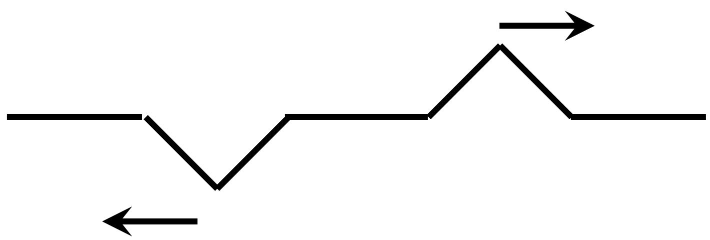
1. $y = f(x + v_0 t)$
2. $y = f(x - v_0 t)$
3. $y = f(x) + v_0 t$
4. $y = f(x) - v_0 t$
5. Something else.



What happens when they would have passed each other if the other hadn't been there?



1.  (Bounce off)

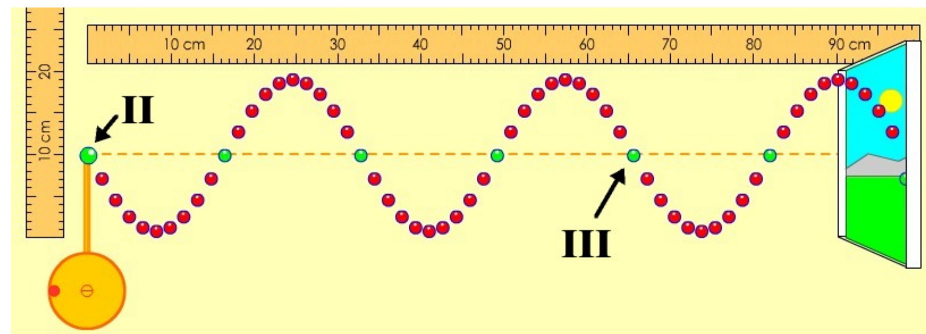
2.  (Pass through)

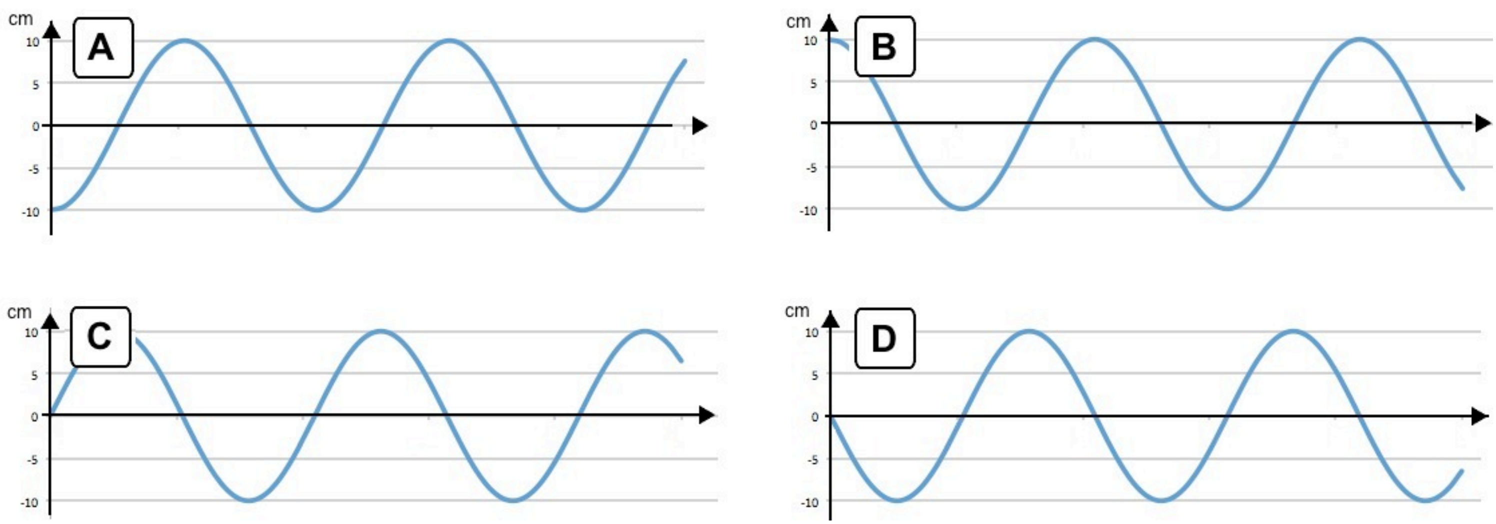
3. (Cancel)

4. Other

An elastic string (modeled as a series of beads) driven by a wheel driving one of the beads up and down sinusoidally. . The driving wheel has generated a traveling wave of amplitude 10 cm moving to the right. (The string continues on for a long way to the right as indicated by its going "out the window.") The figure shows $t = 0$, when the green bead marked "II" is passing through its equilibrium point.

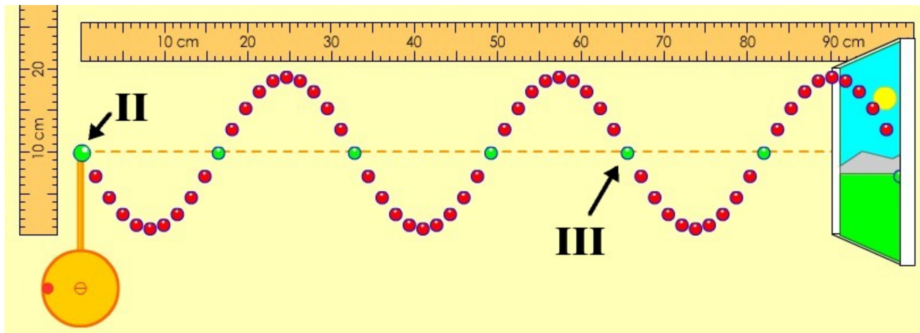
Which of the graphs could serve as the graph of **the vertical displacement of bead II** as a function of **time**?

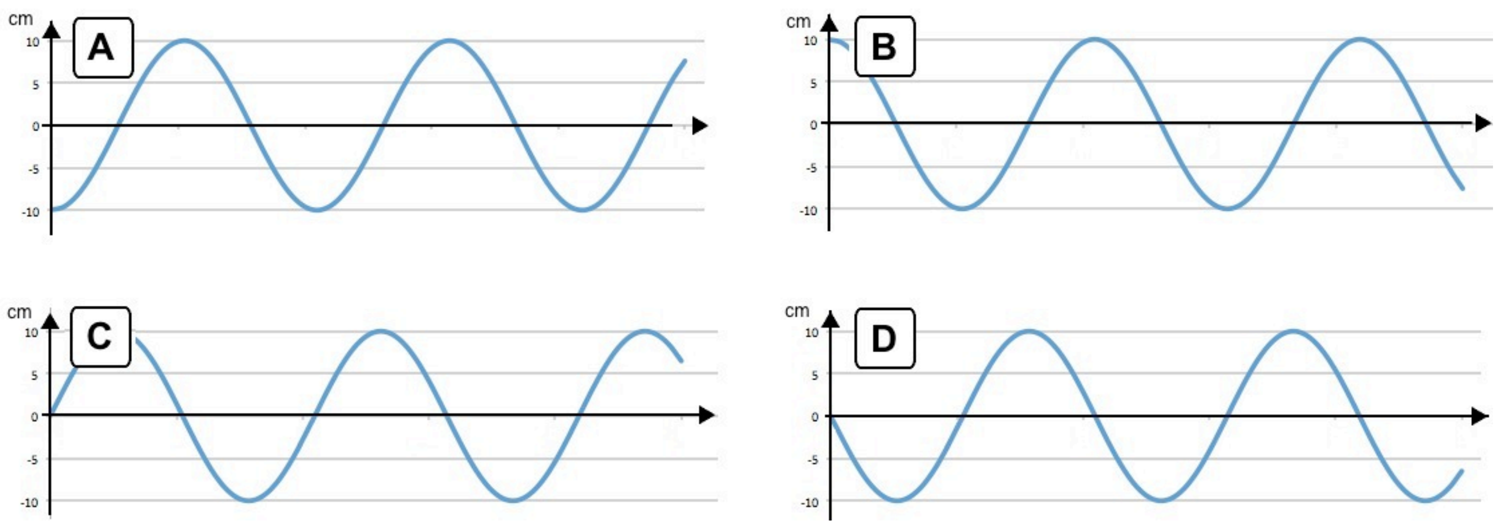




An elastic string (modeled as a series of beads) driven by a wheel driving one of the beads up and down sinusoidally. . The driving wheel has generated a traveling wave of amplitude 10 cm moving to the right. (The string continues on for a long way to the right as indicated by its going "out the window.") The figure shows $t = 0$, when the green bead marked "II" is passing through its equilibrium point.

Which of the graphs could serve as a graph of **the vertical displacement of bead III** as a function of **time**?





An elastic string (modeled as a series of beads) driven by a wheel driving one of the beads up and down sinusoidally. . The driving wheel has generated a traveling wave of amplitude 10 cm moving to the right. (The string continues on for a long way to the right as indicated by its going "out the window.") The figure shows $t = 0$, when the green bead marked "II" is passing through its equilibrium point.

Which of the graphs could serve as a graph of **the vertical displacement of the elastic string at the time *t* = 0** as a function of **position**?