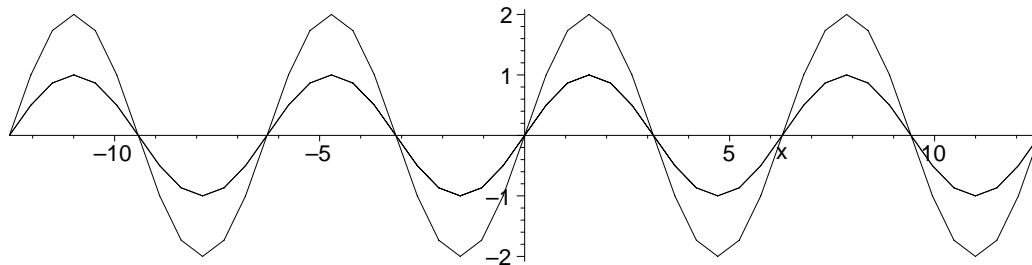


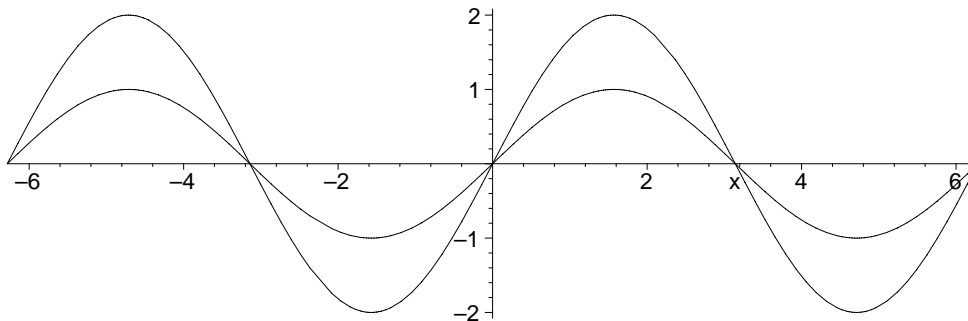
Math 2280-2
Friday April 20
Wave games

```
> restart:with(plots):  
Warning, the name changecoords has been redefined
```

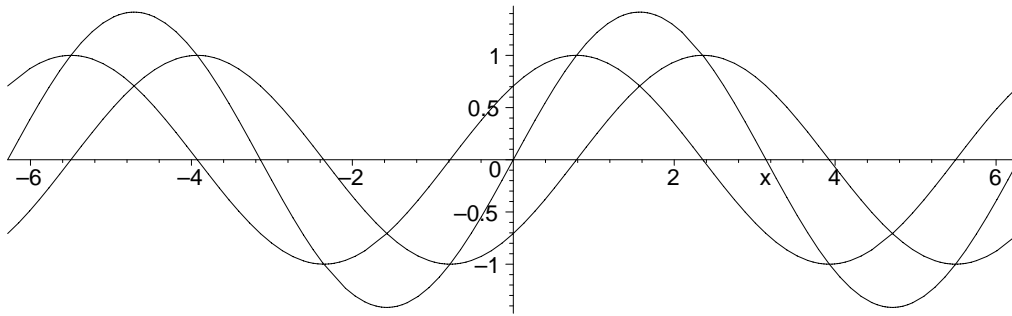
```
> #play this movie to illustrate the fact that  
#vibrating strings with fixed endpoints are  
#really the sum of waves traveling to the left  
#and right with speed c:  
animate({sin(x-.5*t),sin(x+.5*t),2*sin(x)*cos(.5*t)},  
x=-4*Pi..4*Pi,t=0..4*Pi, color=black,frames = 64);
```



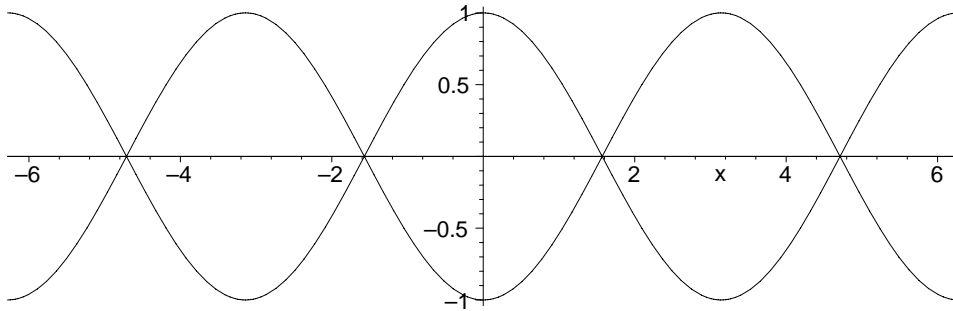
```
> #since I can't bring the movie to class, here are some stills:  
t:=0:  
plot({sin(x-.5*t),sin(x+.5*t),2*sin(x)*cos(.5*t)},  
x=-2*Pi..2*Pi,color=black);
```



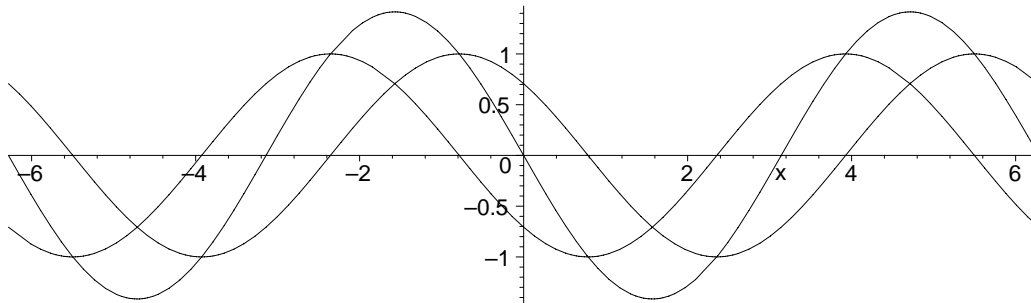
```
> t:=Pi/2:  
plot({sin(x-.5*t),sin(x+.5*t),2*sin(x)*cos(.5*t)},  
x=-2*Pi..2*Pi,color=black);
```



```
> t:=Pi:
plot({sin(x-.5*t),sin(x+.5*t),2*sin(x)*cos(.5*t)},
x=-2*Pi..2*Pi,color=black);
#why do you only see two plots?
```



```
> t:=3*Pi/2:
plot({sin(x-.5*t),sin(x+.5*t),2*sin(x)*cos(.5*t)},
x=-2*Pi..2*Pi,color=black);
```



```
> t:=2*Pi:
plot({sin(x-.5*t),sin(x+.5*t),2*sin(x)*cos(.5*t)},
x=-2*Pi..2*Pi,color=black);
#now we're through half a period of the wave
```

