A. The `movie` command

Here is an example showing a wave with profile $y = e^{-x^2}$ moving to the right with speed 2.

```
x=linspace(-10,10,100);
for j=1:21
    t=(j-1)/5;
    u=exp(-(x-2*t).^2);
    plot(x,u);
    axis([-10,10,0,2])
    xlabel('x')
    ylabel('u')
    M(j)=getframe(gcf);
end
axes('Position',[0 0 1 1])
movie(M,5) %This plays the movie 5 times. To see it play just once, use movie(M)
```

B. The `animatedline` and `addpoints` commands

Here is an example that shows two 3D spirals being traced out.

```
t = linspace(0,10*pi,500);
x1 = cos(t);
y1 = sin(t);
z1 = 0.5*t;
x2 = 2*cos(2*t);
y2 = 2*sin(2*t);
z2 = z1;
h1 = animatedline('Color','b','Marker','o','LineStyle','none');
h2 = animatedline('Color','r','Marker','*','LineStyle','none');
axis([-2 2 -2 2 -1 20])
hold on
for n=1:length(t)
    addpoints(h1,x1(n),y1(n),z1(n));
    addpoints(h2,x2(n),y2(n),z2(n));
    drawnow;
end
hold off
```

<center>Practice Problems</center>

1. Create a movie showing $u(x,t) = \sin(x)\cos(t)$ for $0 \le x \le \pi$ and $0 \le t \le 10$.

2. Trace out the curves $x = (5-t)\cos(t)$, $y = (5-t)\sin(t)$, $z = t-5$ and
   $x = (5-t)\cos(t)$, $y = (5-t)\sin(t)$, $z = 5-t$ for $0 \le t \le 5$.