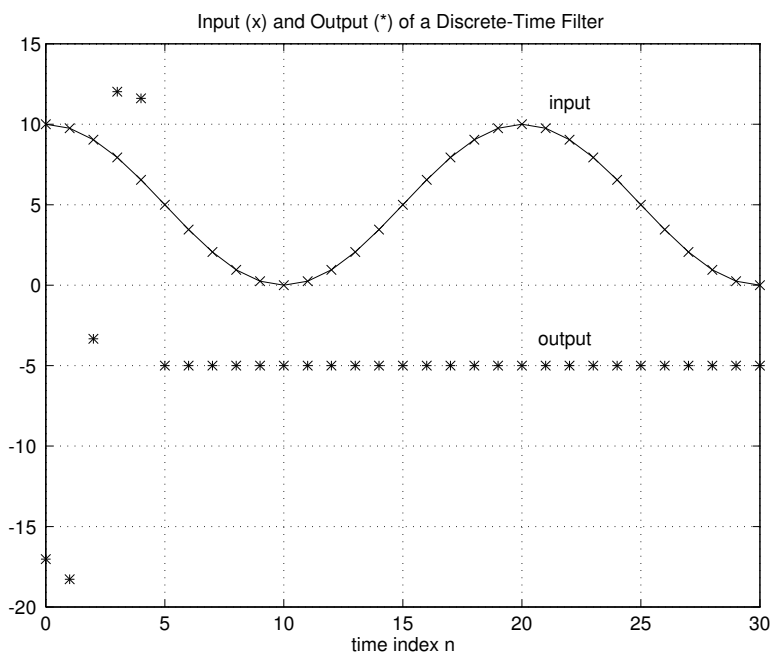


PROBLEM:

The following figure was created by the following MATLAB statements:

```
n=0:30;  
x=A+B*cos(omega*n);  
y=conv(x,h);  
plot(n,x(n+1),'-',n,x(n+1),'x',n,y(n+1),'*')  
...
```

where A, B, omega, and h are previously defined.



- (a) What is the length of the vector h ?
- (b) Are there any zeros on the unit circle? (*yes* *no*)
If so, where are they?

- (c) What is the “d.c. gain” of the discrete-time filter?