Homework 2016-03-18

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Problem 1.
The relationship of amplitude and argument of the LTS system with the angle omega.

Proof. **0.1 The code is shown as follows.**

```
r = @(omega)(5-4.*cos(omega));
phi  = @(omega)(mod(2*(pi - atan(sin(omega) ./ (2-cos(omega))) - omega), 2*pi));

xx = 0:1e-6:2*pi;
ry = r(xx);
phiy = phi(xx);

plot(xx, ry);
hold on;
plot(xx, phiy);

legend('amplitude', 'argument', 'Location', 'Best');
title('The amplitude and argument with omega');
grid on;
```

0.2 The result is shown as follows.

□

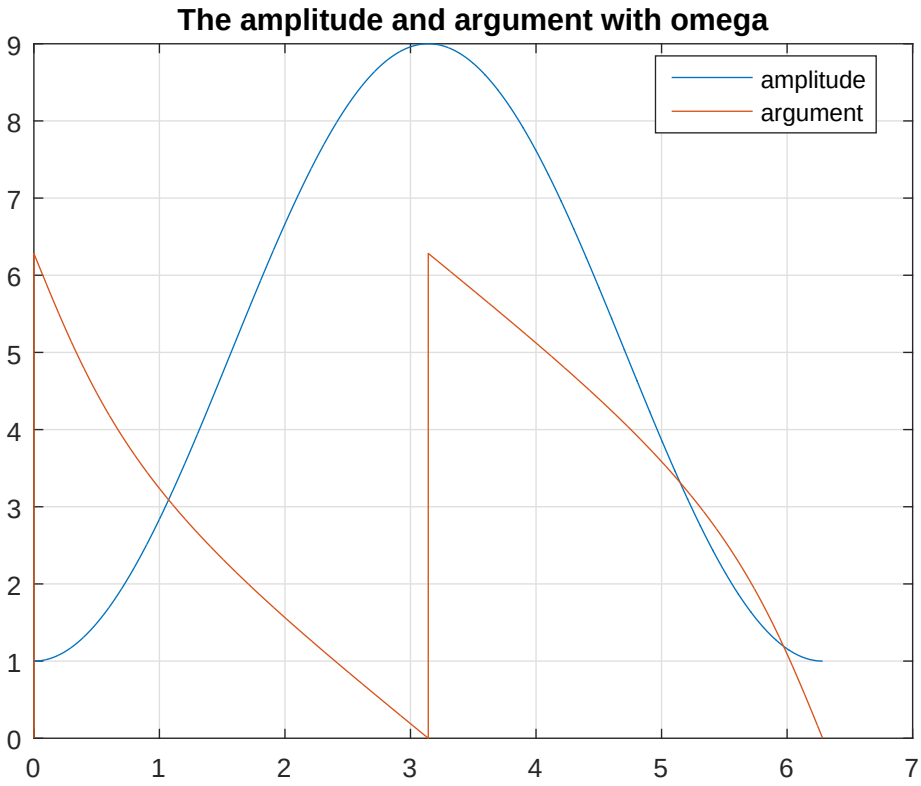

Figure 1: The relationship of amplitude and argument with omega.