Contents

HW 7 #1

```
clear; clc; clf;
```

Given

```
angles = [0, 0, 15, 20];    %3 and 4 are guesses
omega2 = 0;
alpha2 = rad2deg(1);
lengths = [15, 5, 12, 10];
p = [4, -5];
options = [0, 0, -1];
```

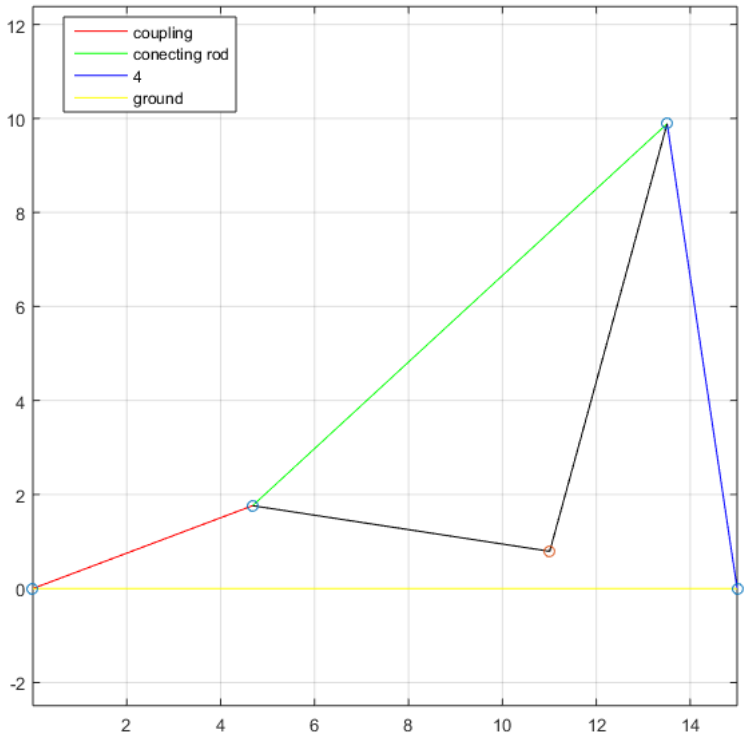
Advancement Through Time

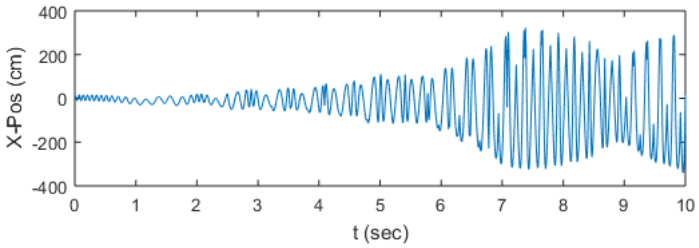
```
Ts = .01;
t = 0:Ts:10;

omega2 = alpha2*t;
theta2 = alpha2*(1/2)*t.^2 + omega2.*t;

alpha2 = alpha2*ones(size(t));
```

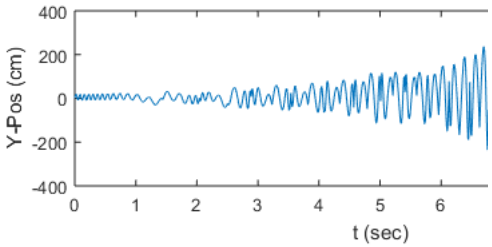
Calculate

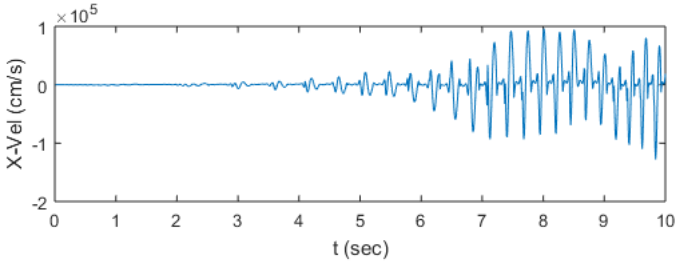
```
[angles, angularVelocity, angularAcceleration, lengths, linearVelocity, linearAcceleration, points, p, vp, ap] = four_bar_func([0 theta2(50) 0 0], omega2(50), al
pha2(50), lengths, p, [1, 0, -1]);

% figure(3); clf;
% plot(t, theta2);
% hold on;
% plot(t, omega2);
% plot(t, alpha2);

for i=1:length(t)

    [angles, angularVelocity, angularAcceleration, lengths, linearVelocity, linearAcceleration, points, p, vp, ap] = four_bar_func([0 theta2(i) 0 0], omega2(i),
alpha2(i), lengths, p, options);

    calcAngVel(i) = angularVelocity(2);
    calcLinVel(i, :) = linearVelocity(2, :);

    calcP(i,:) = p;
    calcVP(i,:) = vp;
    calcAP(i,:) = ap;
end

figure(2); clf;
```

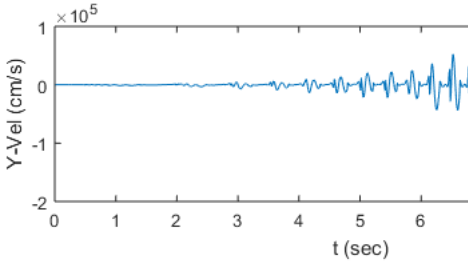
```
subplot(3,2,1)
plot(t, calcP(:,1));
xlabel('t (sec)');
ylabel('X-Pos (cm)');
hold on;
subplot(3,2,2)
plot(t, calcP(:,2));
xlabel('t (sec)');
ylabel('Y-Pos (cm)');
subplot(3,2,3)
plot(t, calcVP(:,1));
xlabel('t (sec)');
ylabel('X-Vel (cm/s)');
subplot(3,2,4)
plot(t, calcVP(:,2));
xlabel('t (sec)');
ylabel('Y-Vel (cm/s)');
subplot(3,2,5)
plot(t, calcAP(:,1));
xlabel('t (sec)');
ylabel('X-Acc (cm/s^2)');
subplot(3,2,6)
plot(t, calcAP(:,2));
xlabel('t (sec)');
ylabel('Y-Acc (cm/s^2)');
% figure(4); clf;
% plot(t, calcAngVel)
% hold on;
% plot(t, calcLinVel)
```

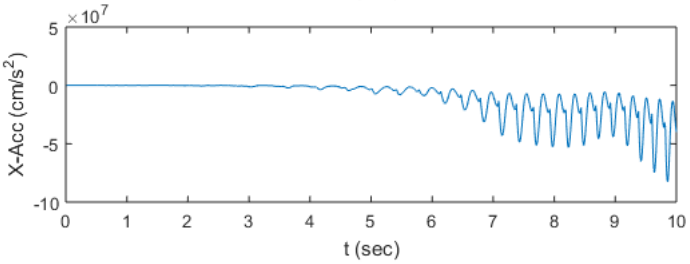


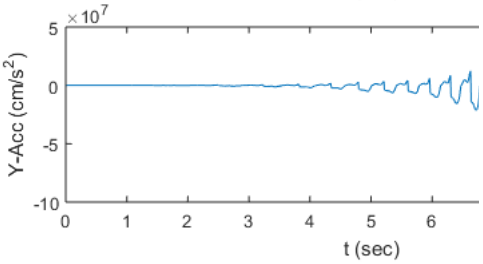












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