3a. Optimizing Range and Height of a Projectile using Matlab

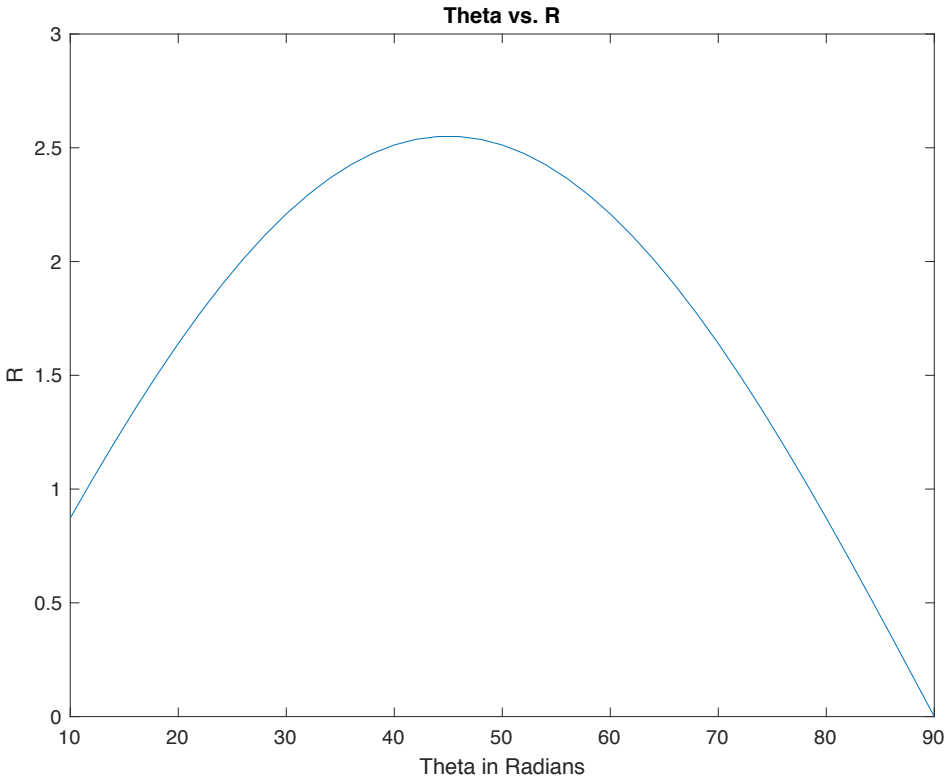
Code:

```
theta = 10:2:90;
R = (25.*sind(2.*theta))./9.8;


%q2
plot(theta, R);
title('Theta vs. R');

%q3
[maxR, i] = max(R)

%q4
theta(i)
```



2)

3)2.5495

4) 44 radians

Code:

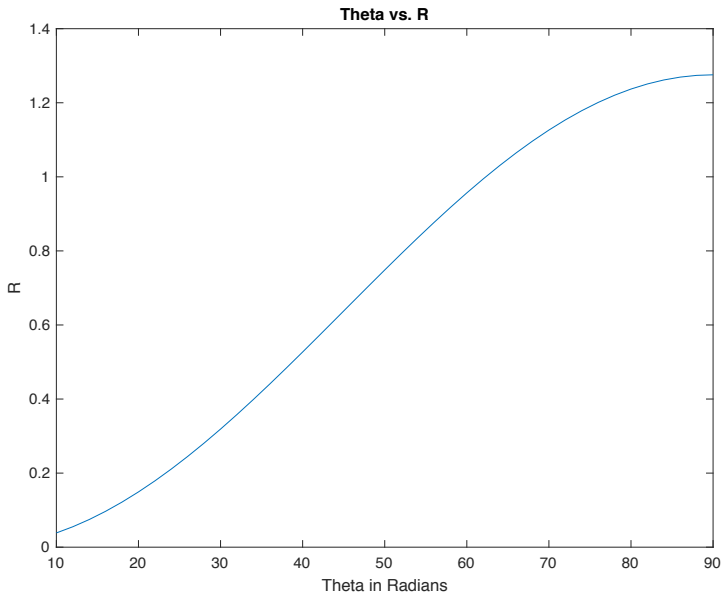
```
theta = 10:2:90;
H = (25.*(sind(theta)).^2)./19.6;

plot(theta, H);
title('Theta vs. R');
xlabel('Theta in Radians')
ylabel('R')

[maxH, i] = max(H)

theta(i)
```

Answers:



2)

3) maxH = 1.2755

4) ans = 90 radians