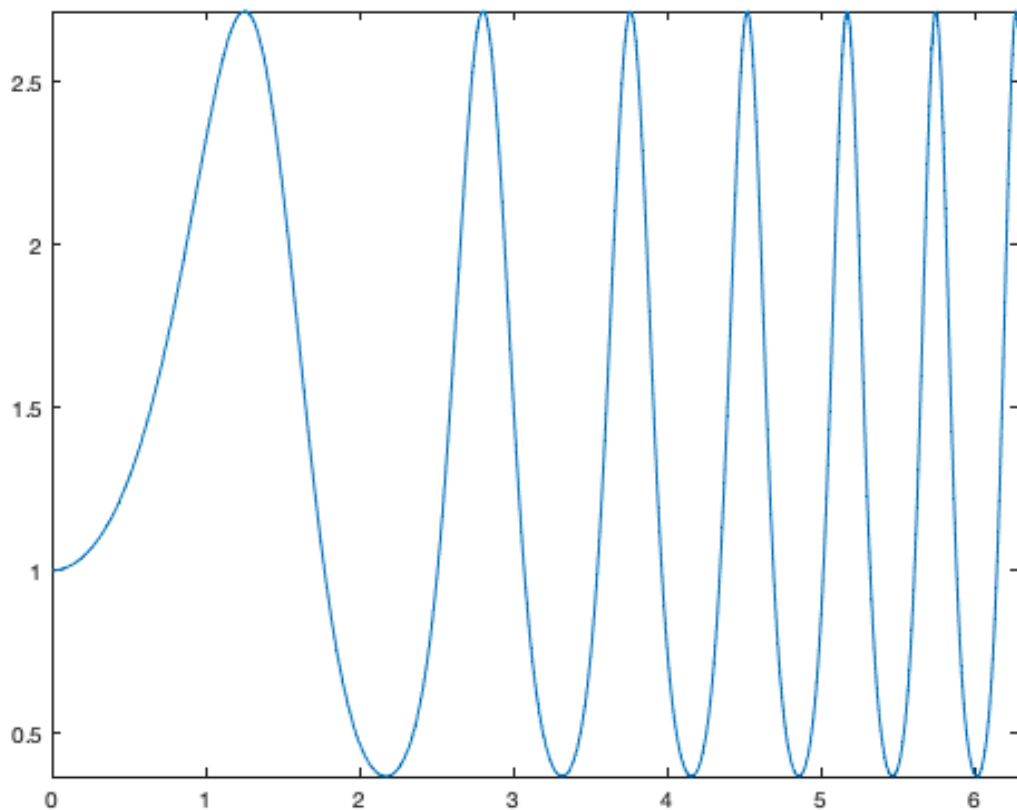

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% Yijia Chen _ Problem Sheet 1

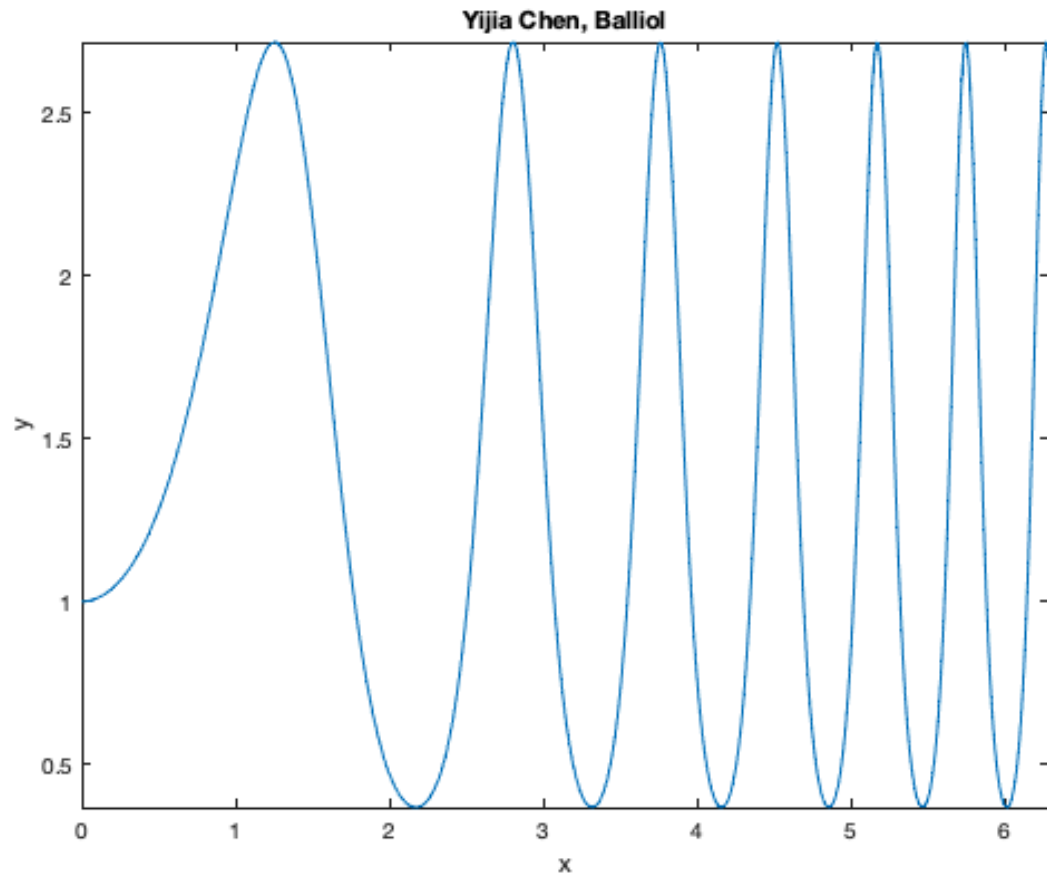
Q1

```
syms x
fplot(exp(sin(x^2)),[0,2*pi]);
hold on
```



Q2

```
xlabel('x')
ylabel('y')
title('Yijia Chen, Balliol')
```



Q3

```
y = @(x) exp(sin(x.^2));
y(0)
y(sqrt(pi))
y(1.473)
```

ans =

1

ans =

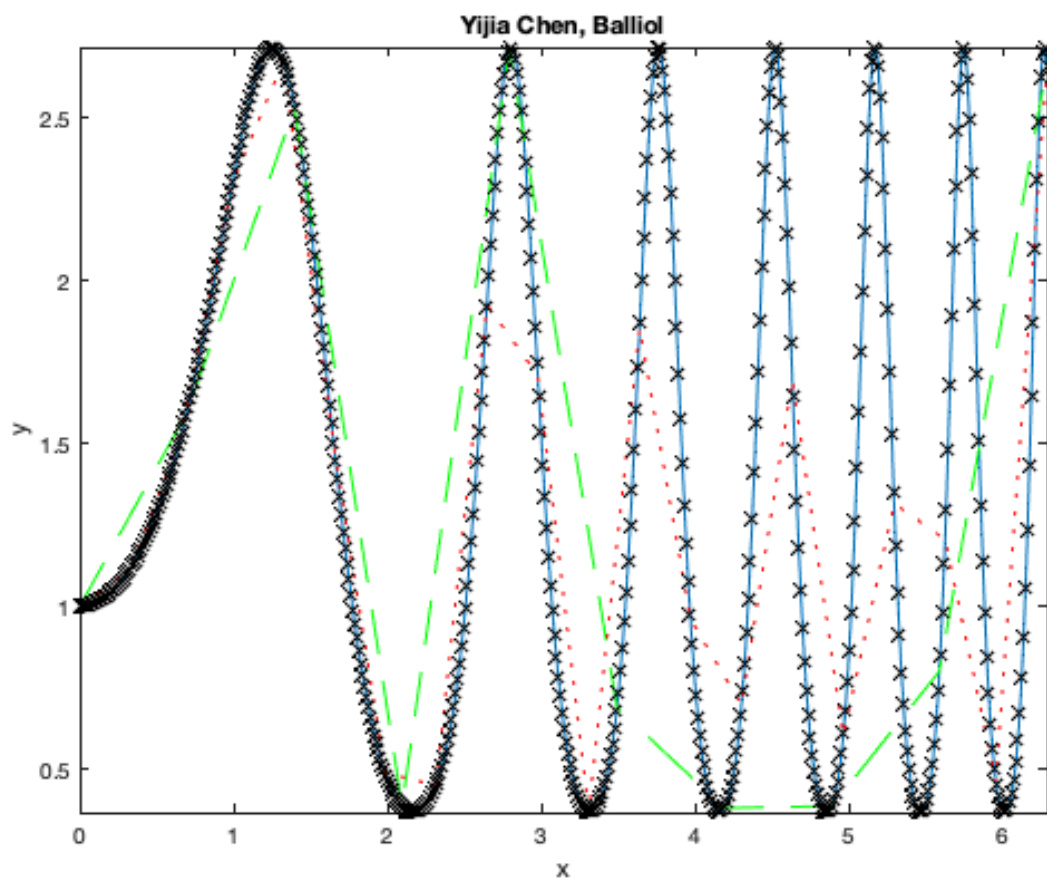
1.0000

`ans =`

`2.2840`

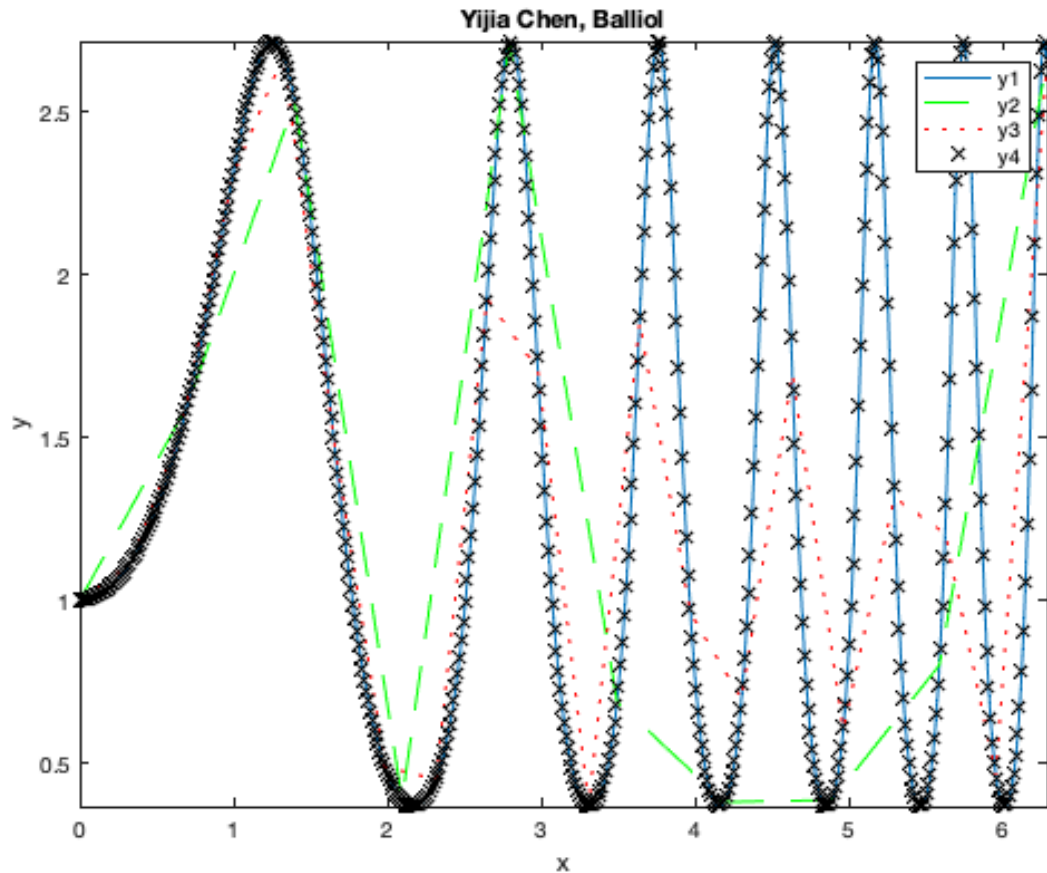
Q4

```
a = linspace(0,2*pi,10);  
ya = y(a);  
plot(a,ya,'g--')  
  
b = linspace(0,2*pi,20);  
yb = y(b);  
plot(b,yb,'r:')  
  
c = linspace(0,2*pi,500);  
yc = y(c);  
plot(c,yc,'kx')
```



Q5

```
legend('y1','y2','y3','y4')
```



Q6

```
for n = 10:10:80 % for n = 10, 20 ... 80
    y = 2; % set the value for y
    for i = 1:n % for i = 1, 2, ... n
        y = sqrt(y); % so here the 'for' loop repeatedly takes square root of
y for n times
    end
    for i = 1:n
        y = y^2; % this loop takes y to the power of 2 for n times
    end % supposedly we should get back y = 2 in the end
    disp(abs(y-2)); % we check how much the computed answer deviates from the
actual value y=2
end
```

% The more computations we do on y , the greater the truncation error in our end result.

$2.3537e-14$

$1.5736e-10$

$8.2224e-09$

$6.3903e-05$

0.3513

1

1

1

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