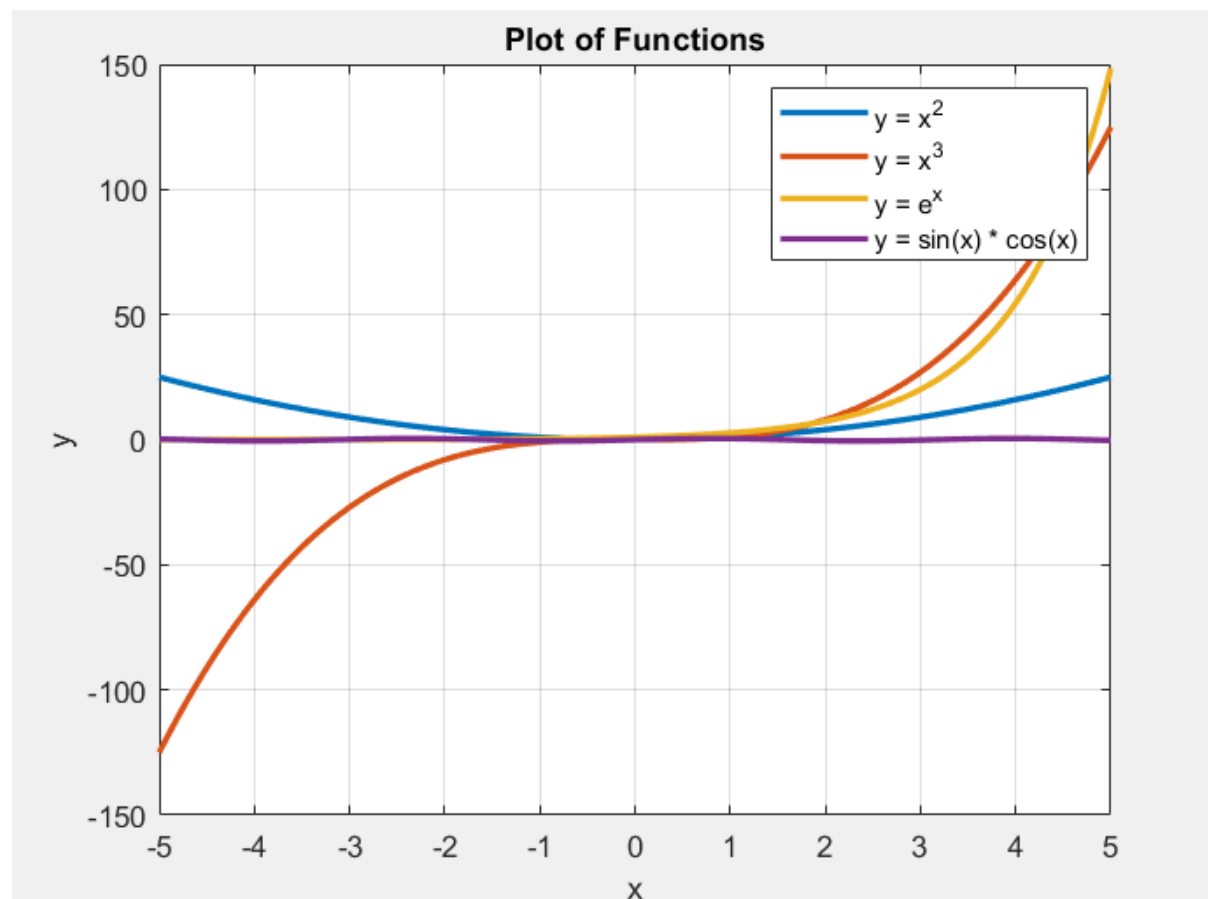


## 2.1

Code:-

```
1  x = linspace(-5, 5, 1000);
2  y1 = x.^2;
3  y2 = x.^3;
4  y3 = exp(x);
5  y4 = sin(x) .* cos(x);
6
7  figure;
8  plot(x, y1, 'LineWidth', 2, 'DisplayName', 'y = x^2');
9  hold on;
10 plot(x, y2, 'LineWidth', 2, 'DisplayName', 'y = x^3');
11 plot(x, y3, 'LineWidth', 2, 'DisplayName', 'y = e^x');
12 plot(x, y4, 'LineWidth', 2, 'DisplayName', 'y = sin(x) * cos(x)');
13
14 xlabel('x');
15 ylabel('y');
16 legend('show');
17 title('Plot of Functions');
18 grid on;
19 hold off;
```

Result:-



## 2.2

Code:-

```
1 S = 0;  
2 n = 100;  
3 for k = 1:n  
4     S = S + k;  
5 end  
6 fprintf('n = %.f and the sum = %.f \n', n, S)
```

Result:-

```
>> Question2  
n = 100 and the sum = 5050
```

## 2.3

Code:-

```
1 x = linspace(-2*pi, 2*pi, 150);  
2 y = tan(x);  
3  
4 figure;  
5 plot(x, y, 'LineWidth', 2);  
6 title('Plot of tan(x)');  
7 xlabel('x');  
8 ylabel('tan(x)');  
9 grid on;  
10  
11 xlim([-2*pi, 2*pi]);  
12 ylim([-20, 20]);
```

Result:-

