```
% name-amlan nayak
% reg no.-19bcd7143
% date-25/10/19
clear all
clc
syms y(t)
ode = diff(y,t) + (y/(10+t))*2 == 0;
y(t) = dsolve(ode,y(0)==20)
```

```
y(t) =
```

$$\frac{2000}{(t+10)^2}$$

```
vpa(y(5))
```

```
ans =
```

$$8.888888888888888888888888888889$$

```
% name-amlan nayak
% reg no.-19bcd7143
% date-25/10/19
clear all
clc
syms y(x)
Dy = diff(y);
ode = diff(y,x,2) -3*diff(y,x) +2*y ==x^2 + exp(x);
ySol(x) = dsolve(ode)
```

```
ySol(x) =
```

$$C_3\,e^{x} - e^{2x}\left(e^{-x} + e^{-2x}\left(\frac{x^2}{2} + \frac{x}{2} + \frac{1}{4}\right)\right) + e^{x}\,(2\,e^{-x} - x + 2\,x\,e^{-x} + x^2\,e^{-x}) + C_4\,e^{2x}$$

```
% name-amlan nayak
% reg no.-19bcd7143
% date-25/10/19
clear all
clc
syms y(x) x
Dy = diff(y);
ode = diff(y,x,2) +y == 2*cos(x);
ySol(x) = dsolve(ode)
```

```
ySol(x) =
```

$$\frac{\cos(3\,x)}{4}+\frac{3\cos(x)}{4}+C_3\cos(x)-C_4\sin(x)+\sin(x)\left(x+\frac{\sin(2\,x)}{2}\right)$$