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Code 1:

```
clc
clear all
syms f1(t) f2(t) s
f1(t)=1-t+2*(t^2);
f2(t)=4*exp(-3*t)-10*sin(2*t);
fprintf('20BCD7171 MAJJIGA JASWANTH')
F1 = laplace(f1,t,s)
F2 = laplace(f2,t,s)
```

Command window:

```
20BCD7171 MAJJIGA JASWANTH
F1 =
```

$$\frac{s-1}{s^2}+\frac{4}{s^3}$$

```
F2 =
```

$$\frac{4}{s+3}-\frac{20}{s^2+4}$$

20BCD7171 MAJJIGA JASWANTH

F1 =

$$\frac{s-1}{s^2}+\frac{4}{s^3}$$

F2 =

$$\frac{4}{s+3}-\frac{20}{s^2+4}$$

Code 2:

```
clc
clear all
syms t s Y y(t)
Df=diff(y(t),t,1);
DDf=diff(y(t),t,2);
Eqn=DDf+2*Df==8*t;
LEQN=laplace(Eqn,t,s);
LT_Y=subs(LEQN,laplace(y,t,s),Y);
LT_Y=subs(LT_Y,y(0),1);
LT_Y=subs(LT_Y,subs(diff(y(t),t),t,0),0);
ys=solve(LT_Y,Y);
fprintf('20BCD7171 MAJJIGA JASWANTH')
y = ilaplace(ys,s,t)
```

Command window:

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$$y = 2t^2 - e^{-2t} - 2t + 2$$

Code3:

```
clc
clear all
syms t s Y y(t) Dy(t)
Df=diff(y(t),t,1);
DDf=diff(y(t), t,2);
Eqn=DDf+16*y==16*sin(2*t);
LEQN=laplace(Eqn,t,s);
LT_Y=subs(LEQN,laplace(y,t,s),Y);
LT_Y=subs (LT_Y,y(0), 1);
LT_Y=subs(LT_Y, subs (diff(y(t), t), t,0),0);
ys=solve (LT_Y,Y);
fprintf('20BCD7171\n MAJJIGA JASWANTH')
y=ilaplace(ys,s,t)
```

Command window:

```
20BCD7171
 MAJJIGA JASWANTH
y =
```

$$\cos(4t) + \frac{4\sin(2t)}{3} - \frac{2\sin(4t)}{3}$$