**Task1**

syms t s

f = -1.25+3.5\*t\*exp(-2\*t)+1.25\*exp(-2\*t)

F = laplace(f,s)

**Task2**

syms s t

Y = 1/s + 2/(s+4) + 1/(s+5)

y = ilaplace(Y, t)

**Task3**

syms t s

num = [1 5 4]

den = [1 0 0 0 1]

x = tf(num,den)

[r,p,k] = residue(num,den)

x1 = r(1)/(s-p(1))+r(2)/(s-p(2))+r(3)/(s-p(3))+r(4)/(s-p(4))

syms s t

X=(s^2+5\*s+4)/(s^4+1)

x = ilaplace(X,t)

ezplot(x, [0 10])

title('Inverse of Rational Form')

grid on;