

ME205: Solutions to an Exercise in Interpolation

1. 75.47°C
2. 75.57°C
3. 74.99°C

The following Scilab code answers all three questions.

```
// Unit 5.6 Exercise
```

```
time=[0,115,245,380,498]  
Temp=[76.6,72.4,77.1,81.1,74.5]
```

```
//Question 1
```

```
lTemp = (77.1-72.4) * (200-115)/(245-115)+72.4  
disp(lTemp)
```

```
// Question 2
```

```
time0=115  
time1=245  
time2=380  
timei=200  
Temp0=72.4  
Temp1=77.1  
Temp2=81.1
```

```
qTemp= Temp0+ (Temp1-Temp0)/(time1-time0) * (timei-time0)  
arg0=((Temp2-Temp1)/(time2-time1)-(Temp1-Temp0)/(time1-time0))/(time2-time0)  
arg0=arg0*(timei-time0)*(timei-time1)  
qTemp=qTemp+arg0
```

```
disp(qTemp)
```

```
// Question 3
```

```
d=splin(time,Temp)  
sTemp=interp(200, time, Temp, d)  
disp(sTemp)
```

