In [19]:

```
import numpy as np
import matplotlib.pyplot as plt
from scipy.optimize import curve_fit
```

In [13]:

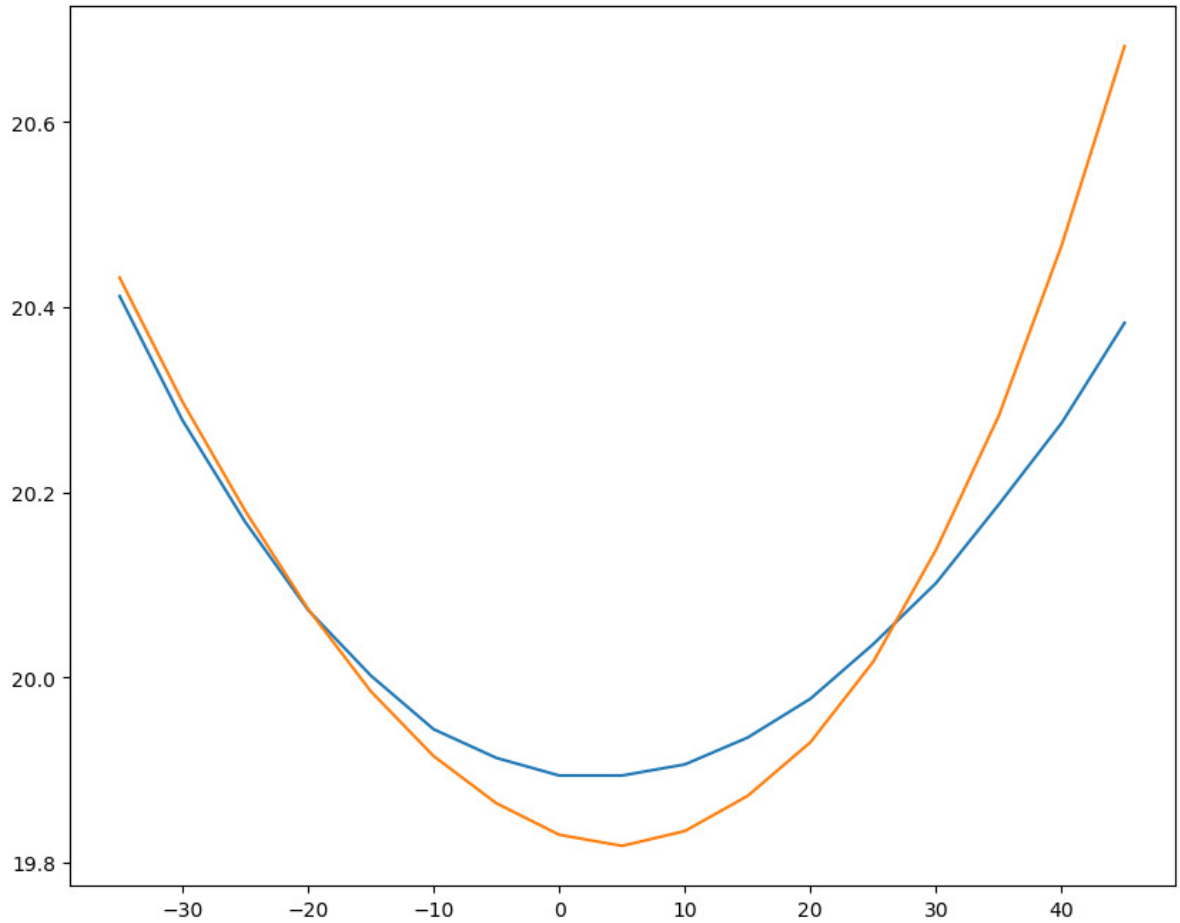
```
T1 = np.array([20.383, 20.275, 20.187, 20.102, 20.036, 19.977, 19.935, 19.906, 19.8
               19.894, 19.913, 19.944, 20.002, 20.073, 20.168, 20.278, 20.412])
T2 = np.array([20.432, 20.298, 20.180, 20.074, 19.985, 19.915, 19.864, 19.830, 19.8
               19.834, 19.872, 19.930, 20.017, 20.138, 20.283, 20.467, 20.682])
x = np.linspace(45, -35, 17)
T2 = T2[::-1]
```

In [14]:

```
plt.figure(figsize = (10, 8))
plt.plot(x, T1)
plt.plot(x, T2)
```

Out[14]:

```
[<matplotlib.lines.Line2D at 0x745f1fb81bb0>]
```



In [15]:

```
T1_m1 = np.array([20.045, 20.060, 20.075, 20.092, 20.109])
T2_m1 = np.array([20.042, 20.059, 20.079, 20.102, 20.122])
T1_m2 = np.array([20.034, 20.048, 20.060, 20.077, 20.092, 20.103])
T2_m2 = np.array([20.012, 20.031, 20.058, 20.075, 20.103, 20.129])
x_m1 = np.linspace(-18, -22, 5)
x_m2 = np.linspace(25, 30, 6)
```

In [20]:

```
def egyenes(x, a, b):
    return a*x + b
```

In [22]:

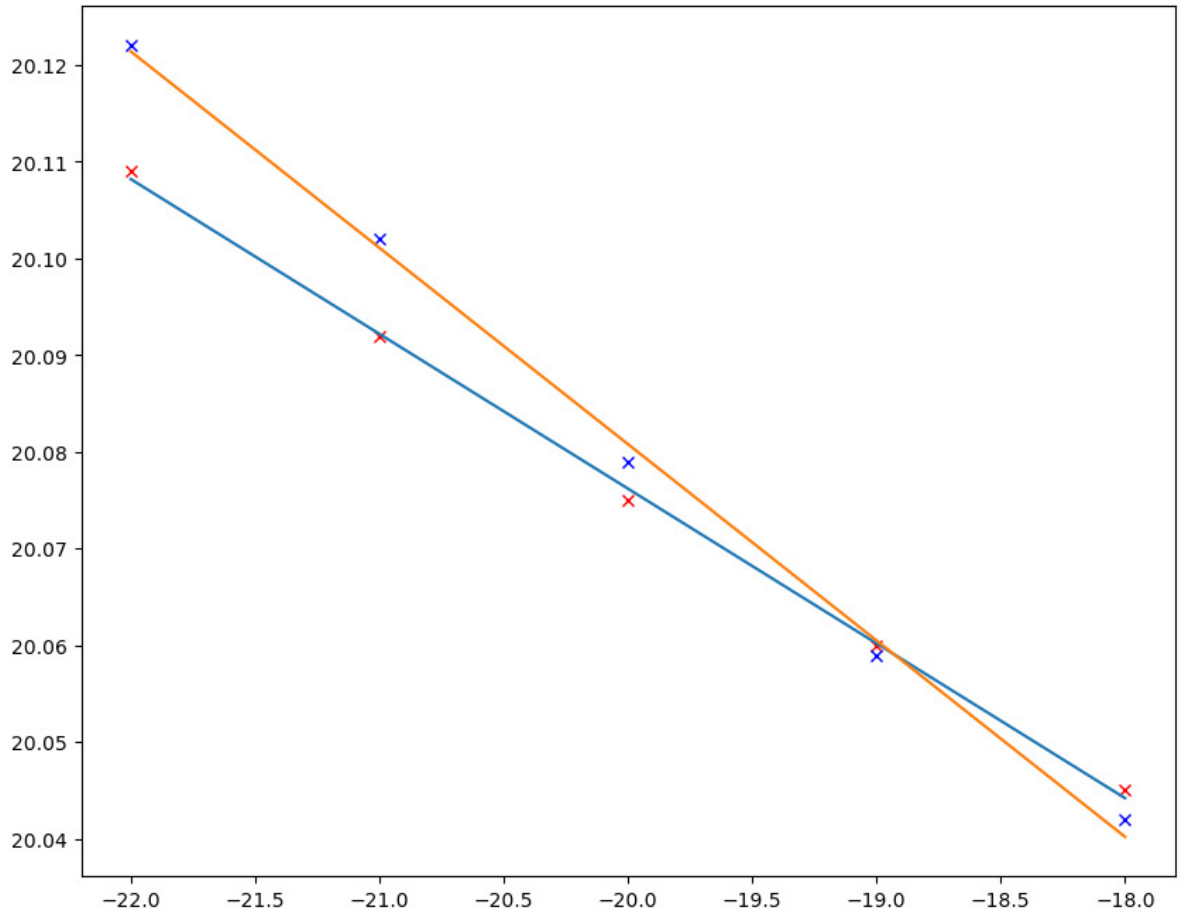
```
popt, pcov = curve_fit(egyenes, x_m1, T1_m1)
popt2, pcov2 = curve_fit(egyenes, x_m1, T2_m1)
```

In [23]:

```
plt.figure(figsize = (10, 8))
plt.plot(x_m1, T1_m1, "rx")
plt.plot(np.linspace(-18, -22, 100), egyenes(np.linspace(-18, -22, 100), *popt))
plt.plot(x_m1, T2_m1, "bx")
plt.plot(np.linspace(-18, -22, 100), egyenes(np.linspace(-18, -22, 100), *popt2))
```

Out[23]:

```
[<matplotlib.lines.Line2D at 0x745f1cd32930>]
```



In [24]:

```
popt3, pcov3 = curve_fit(egyenes, x_m2, T1_m2)
popt4, pcov4 = curve_fit(egyenes, x_m2, T2_m2)
```

In [25]:

```
plt.figure(figsize = (10, 8))
plt.plot(x_m2, T1_m2, "rx")
plt.plot(np.linspace(25, 30, 100), egyenes(np.linspace(25, 30, 100), *popt3))
plt.plot(x_m2, T2_m2, "bx")
plt.plot(np.linspace(25, 30, 100), egyenes(np.linspace(25, 30, 100), *popt4))
```

Out[25]:

```
[<matplotlib.lines.Line2D at 0x745f1cd94cb0>]
```