In[131]:=
```
ym1 = 5; ym13 = 3; y13 = -4; y1 = -8;
```

In[132]:=
```
a = (9 (y1 - ym1) - 27 (y13 - ym13)) / 16
```

Out[132]=
$$\frac{9}{2}$$

In[133]:=
```
b = 27 ((y1 + ym1) - (y13 + ym13)) / 48
```

Out[133]=
$$-\frac{9}{8}$$

In[134]:=
```
c = (27 (y13 - ym13) - (y1 - ym1)) / 16
```

Out[134]=
$$-11$$

In[135]:=
```
d = (27 (y13 + ym13) - 3 (y1 + ym1)) / 48
```

Out[135]=
$$-\frac{3}{8}$$

In[136]:=
```
f[x_] := a x^3 + b x^2 + c x + d
```

In[137]:=
```
f[-1]
```

Out[137]=
$$5$$

In[138]:=
```
f[-1 / 3]
```

Out[138]=
$$3$$

In[139]:=
```
f[1 / 3]
```

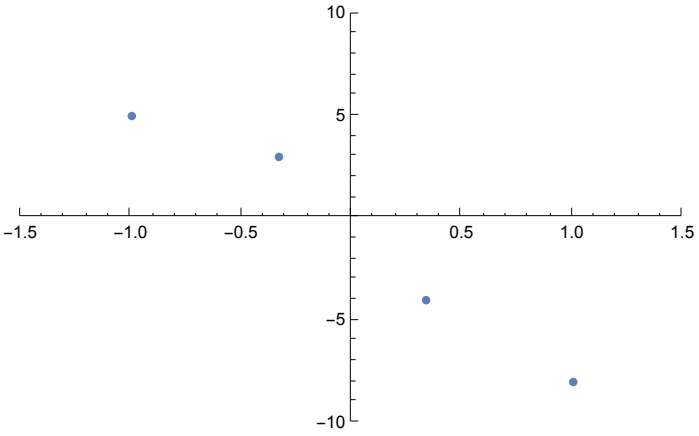
Out[139]=
$$-4$$

In[140]:=
```
f[1]
```

Out[140]=
$$-8$$

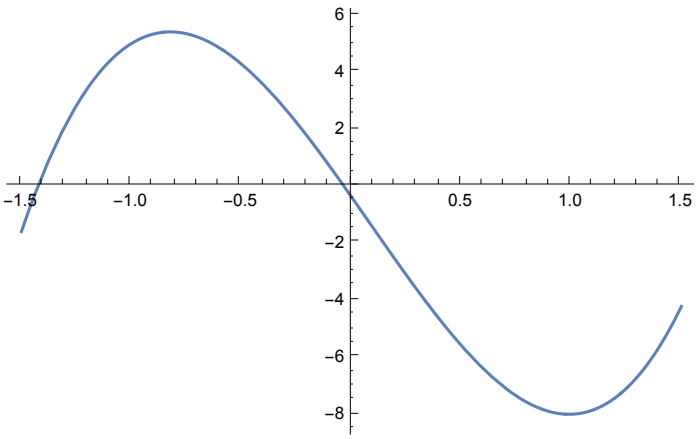
In[141]:=
```
lp = ListPlot[{{-1, ym1}, {-1 / 3, ym13}, {1 / 3, y13}, {1, y1}},
  PlotRange → {{-1.5, 1.5}, {-10, 10}}]
```

Out[141]=



In[142]:=
```
p = Plot[f[x], {x, -1.5, 1.5}]
```

Out[142]=



In[143]:=
```
Show[lp, p]
```

Out[143]=