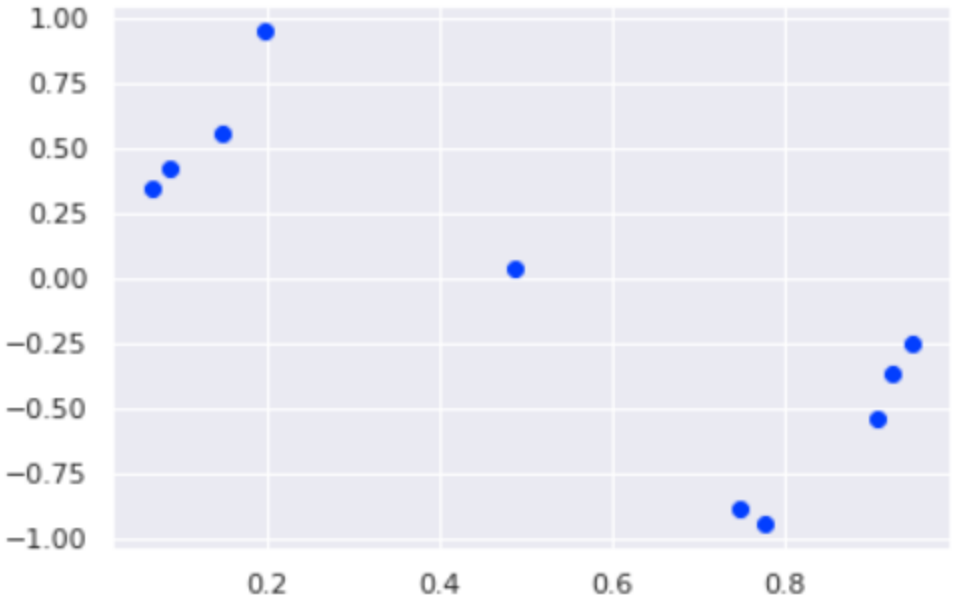
Week 6

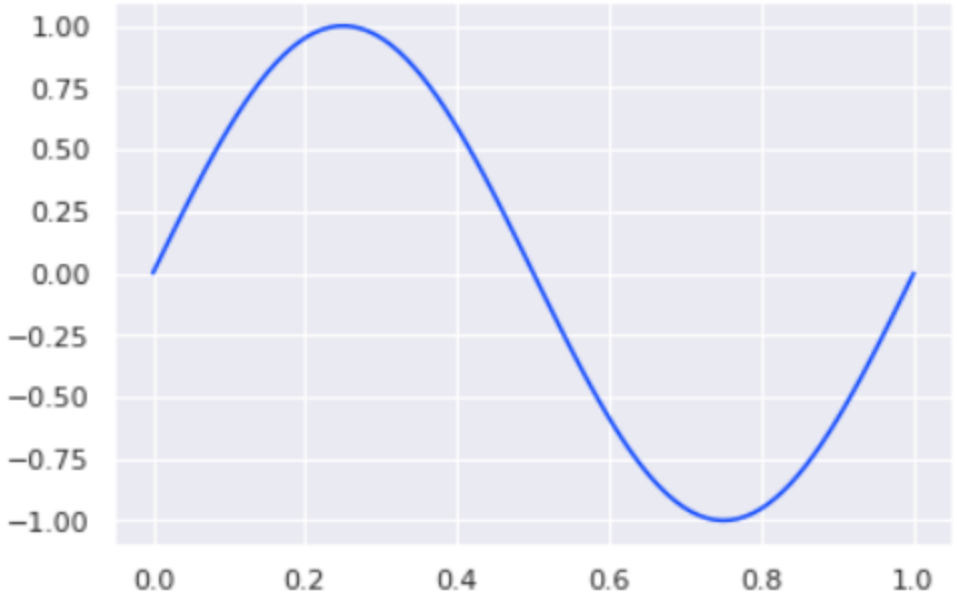
[3]:
```
plt.scatter(x_train, y_train)
```

[3]:
```
<matplotlib.collections.PathCollection at 0x7f910ae44250>
```

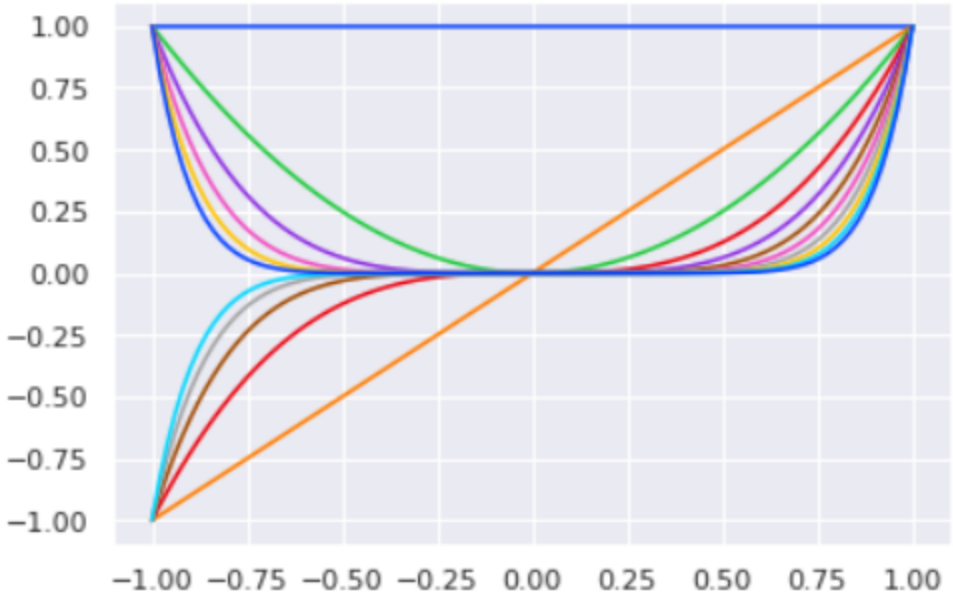


[4]:
```
plt.plot(x_test, y_test, '-')
```

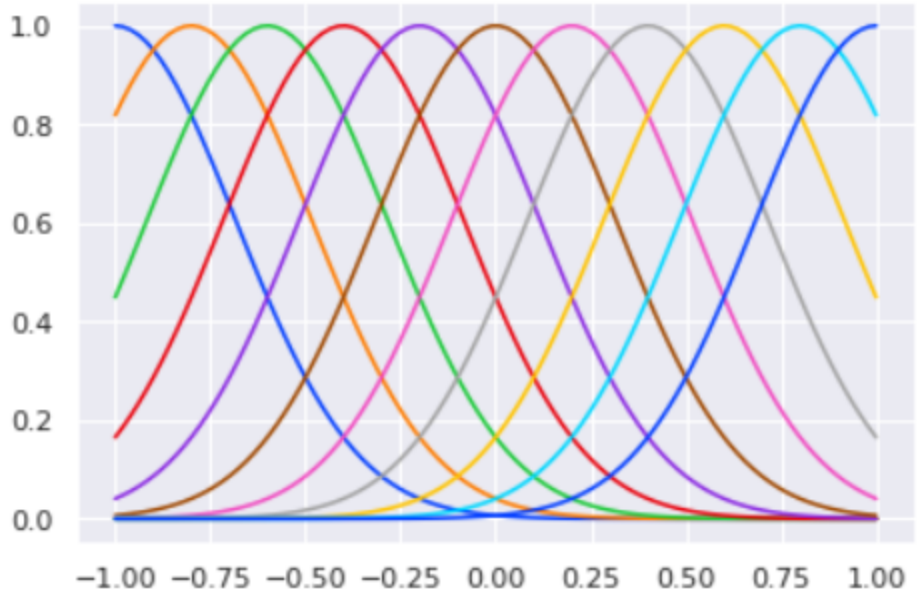
[4]:
```
[<matplotlib.lines.Line2D at 0x7f9102dbd190>]
```



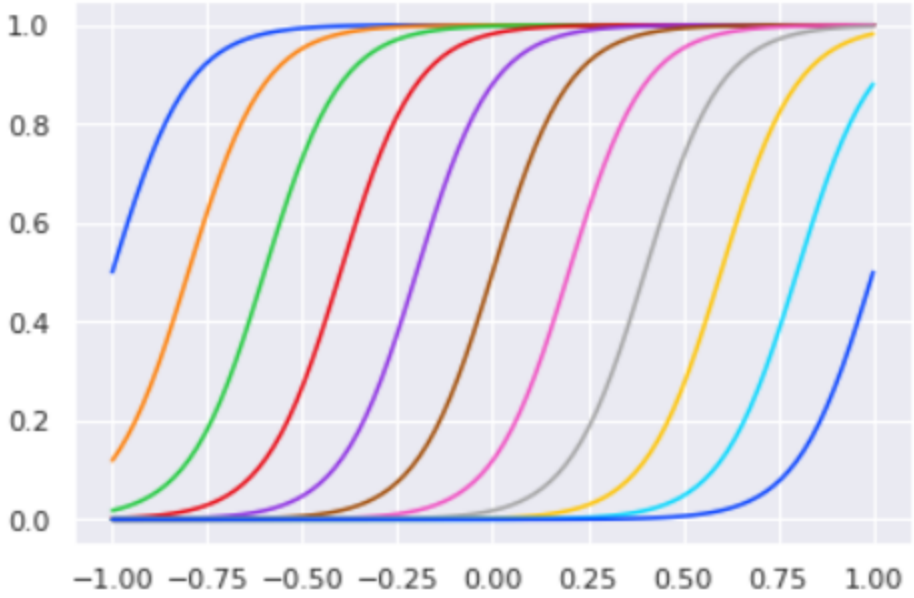
1.1) Polynomial basis function



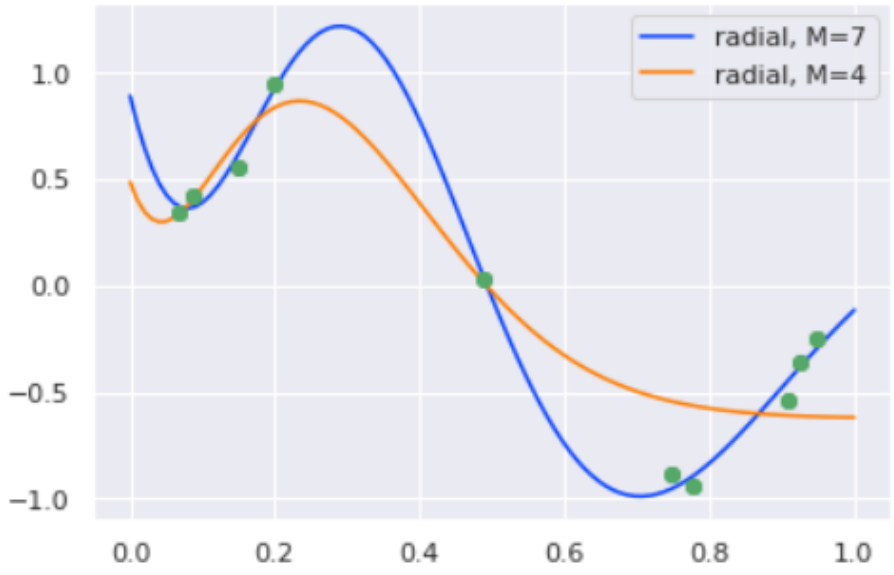
1.2) Radial basis function



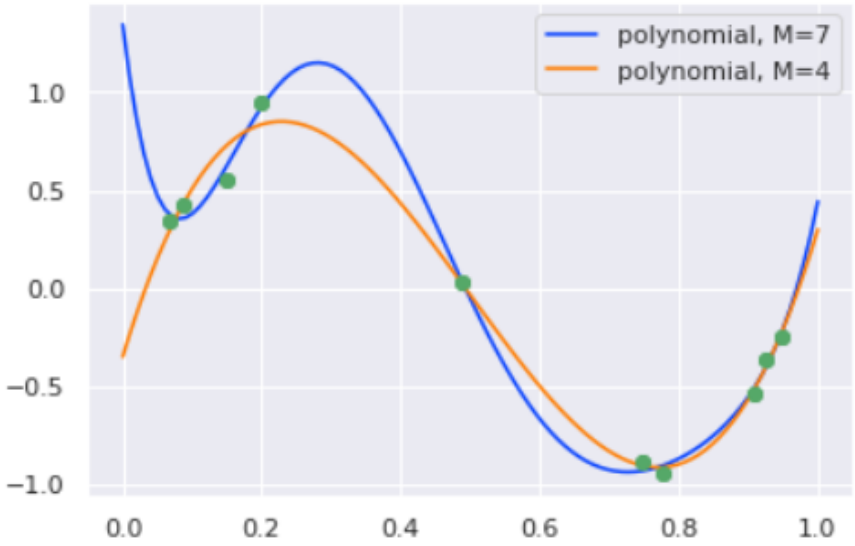
1.3) Sigmoidal basis function



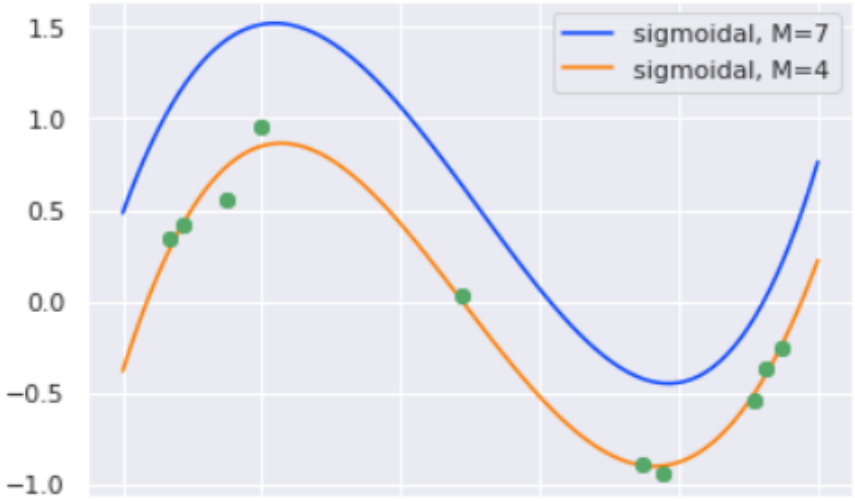
[14]:
```
test(create_radial(np.linspace(-1, 1, 10), 0.1), 7, 'radial, M=7')
test(create_radial(np.linspace(-1, 1, 10), 0.1), 4, 'radial, M=4')
```



[15]:
```
test(create_polynomial(), 7, 'polynomial, M=7')
test(create_polynomial(), 4, 'polynomial, M=4')
```

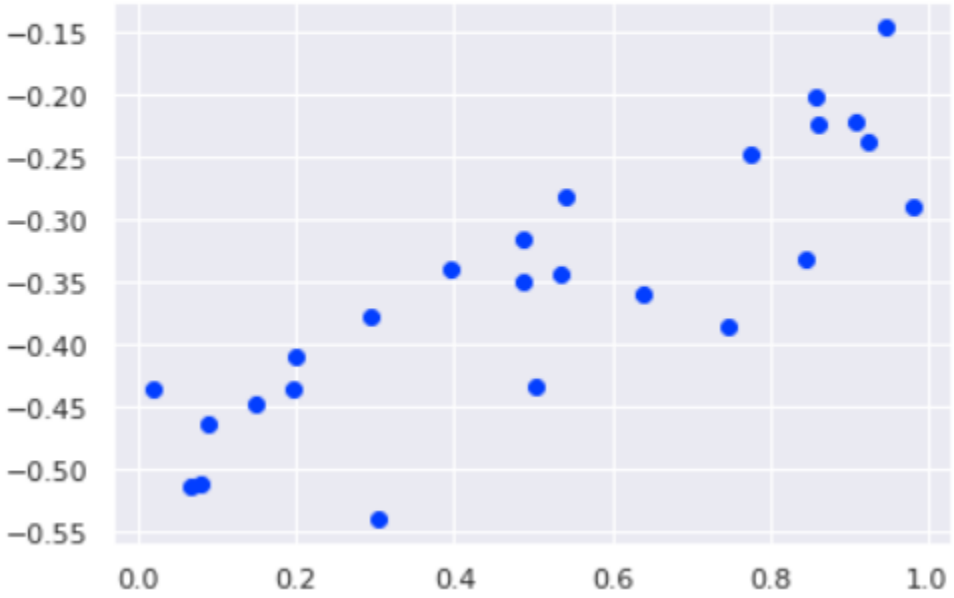


[16]:
```
test(create_sigmoidal(np.linspace(0, 1, 8), 1), 7, 'sigmoidal, M=7')
test(create_sigmoidal(np.linspace(0, 1, 8), 1), 4, 'sigmoidal, M=4')
```



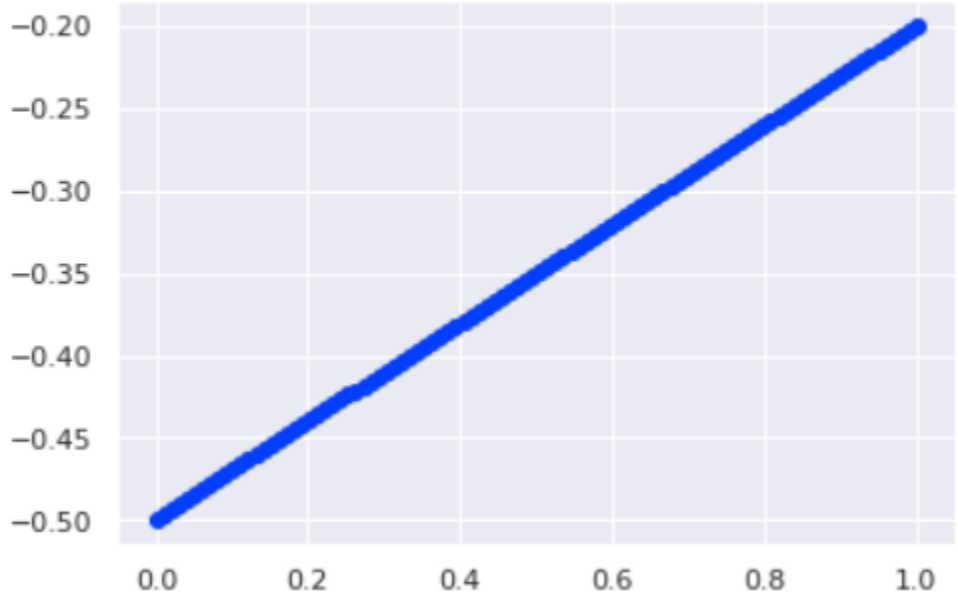
[18]:
```
plt.scatter(xl_train, yl_train)
```

[18]:
```
<matplotlib.collections.PathCollection at 0x7f910118ba90>
```

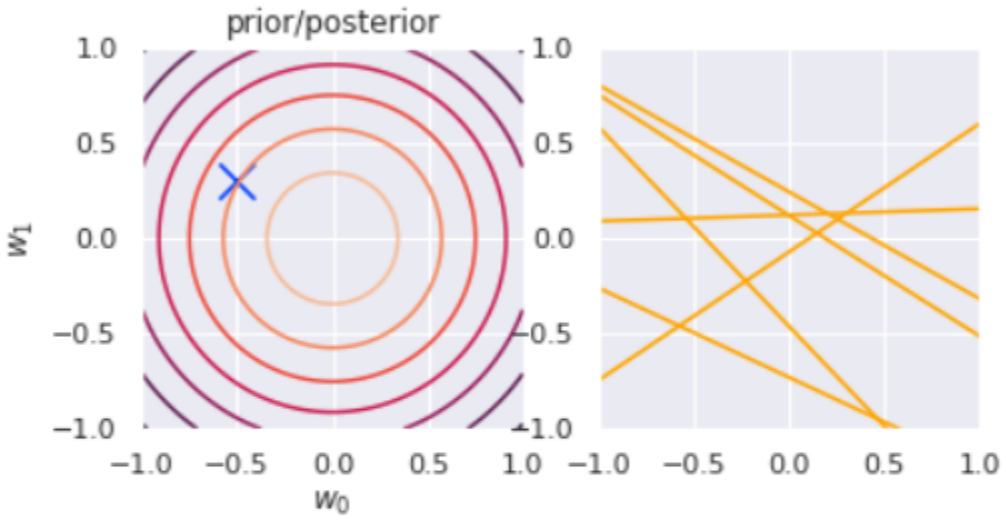


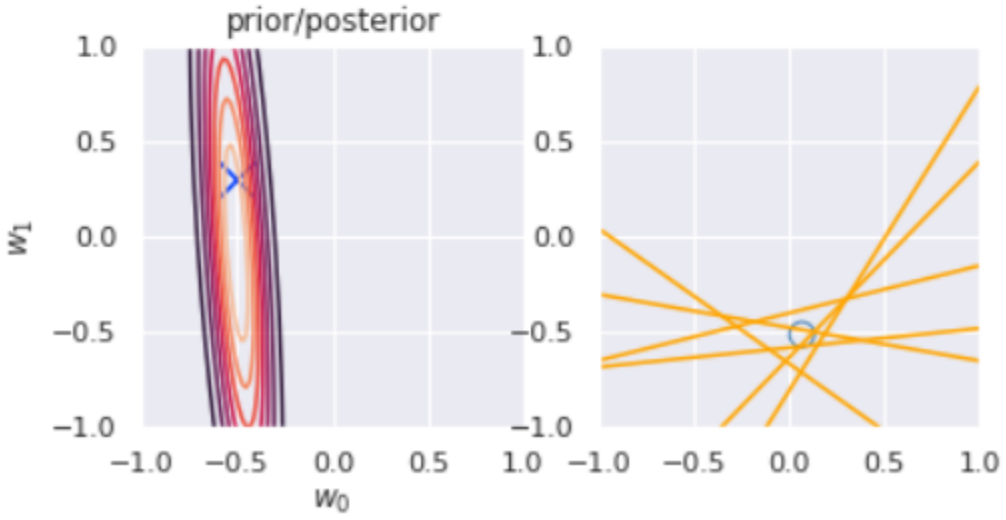
[19]:
```
plt.scatter(xl_test, yl_test)
```

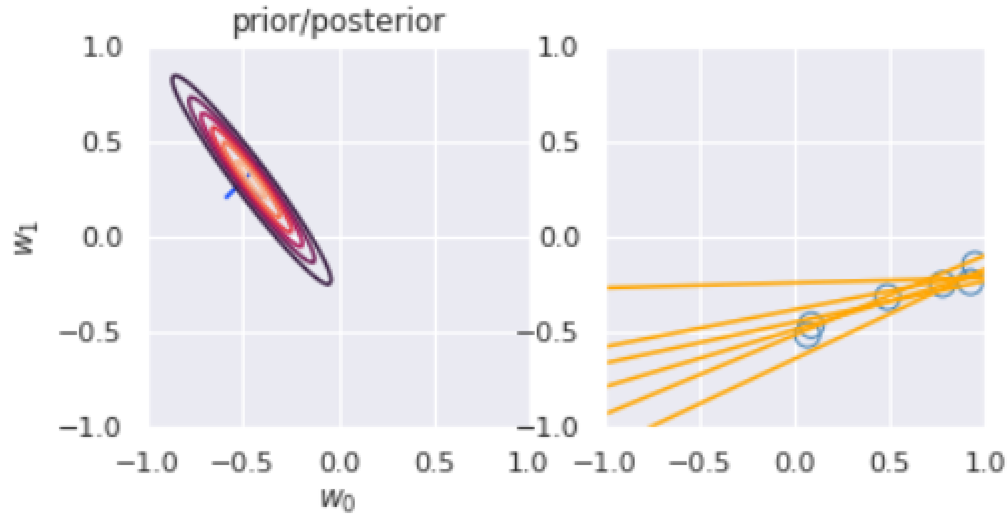
[19]:
```
<matplotlib.collections.PathCollection at 0x7f91010c9310>
```

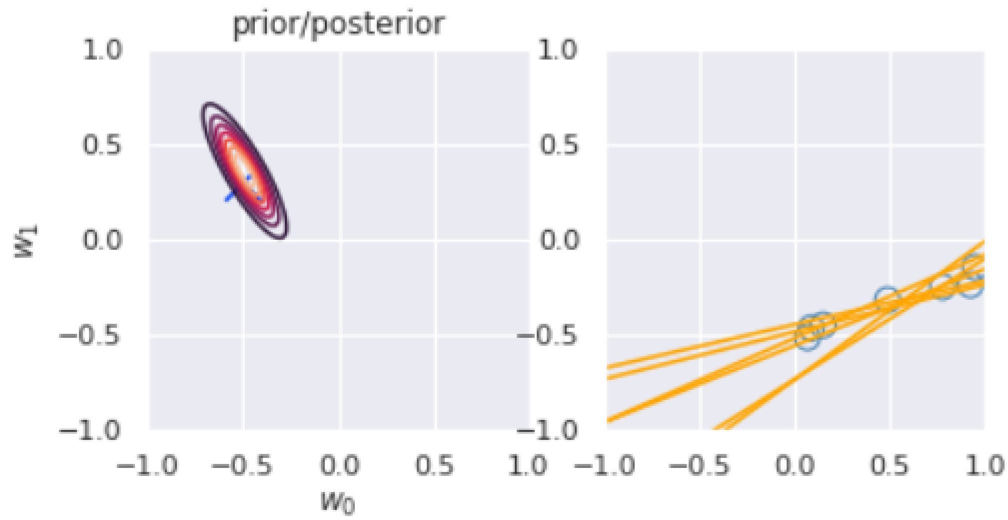


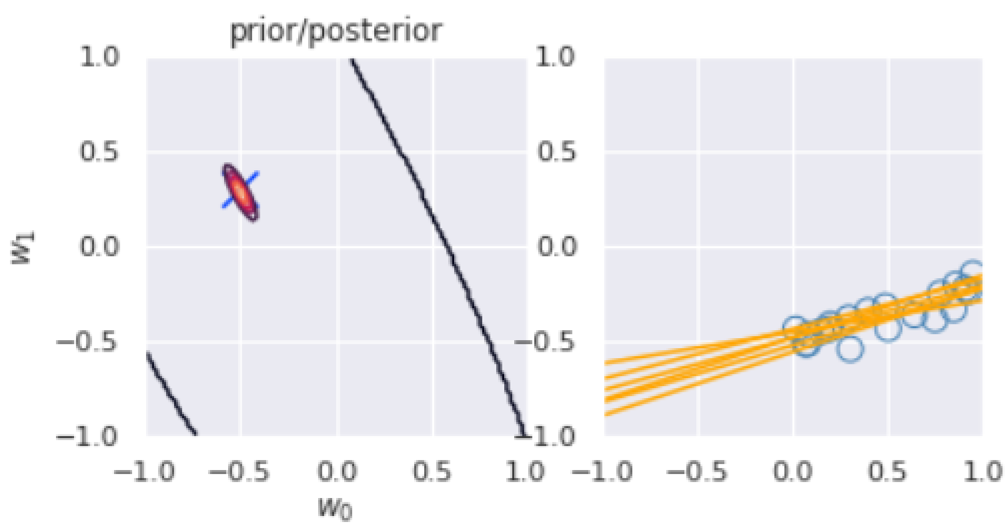
```
    plt.subplot(1, 2, 2)
    plt.scatter(xl_train[:end], yl_train[:end], s=100, faceco
    plt.plot(x, y_sample, c="orange")
    plt.xlim(-1, 1)
    plt.ylim(-1, 1)
    plt.gca().set_aspect('equal', adjustable='box')
    plt.show()
```

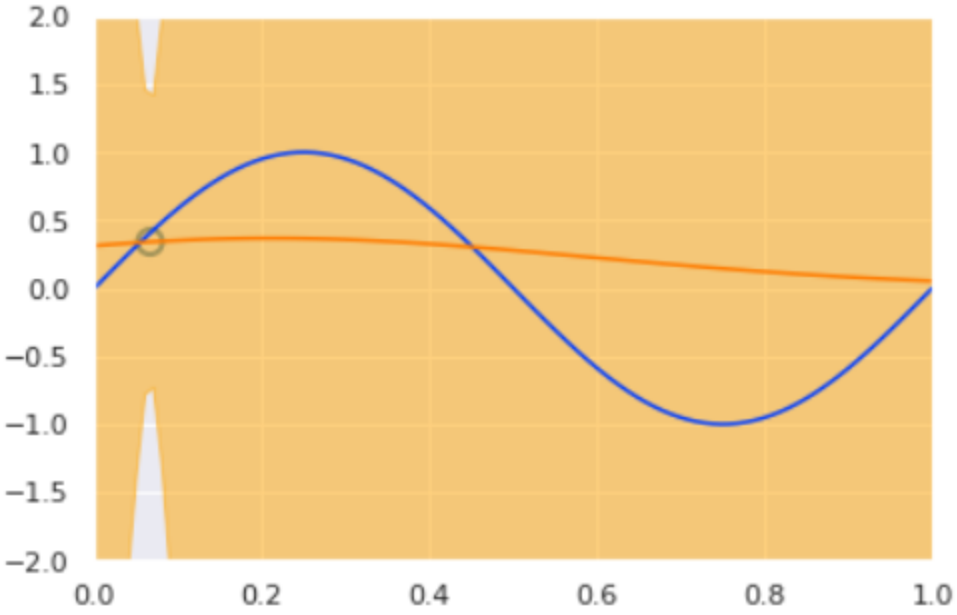


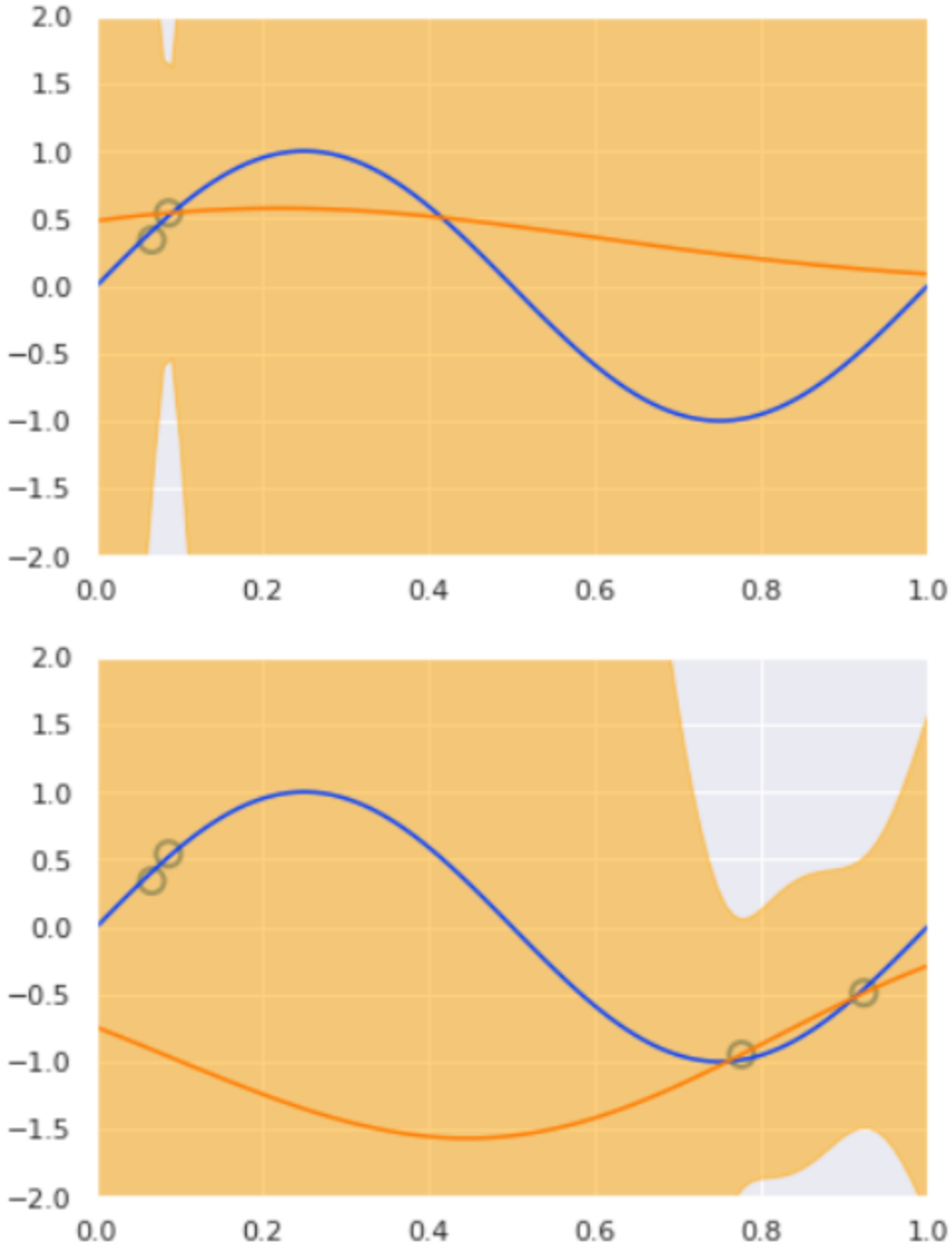


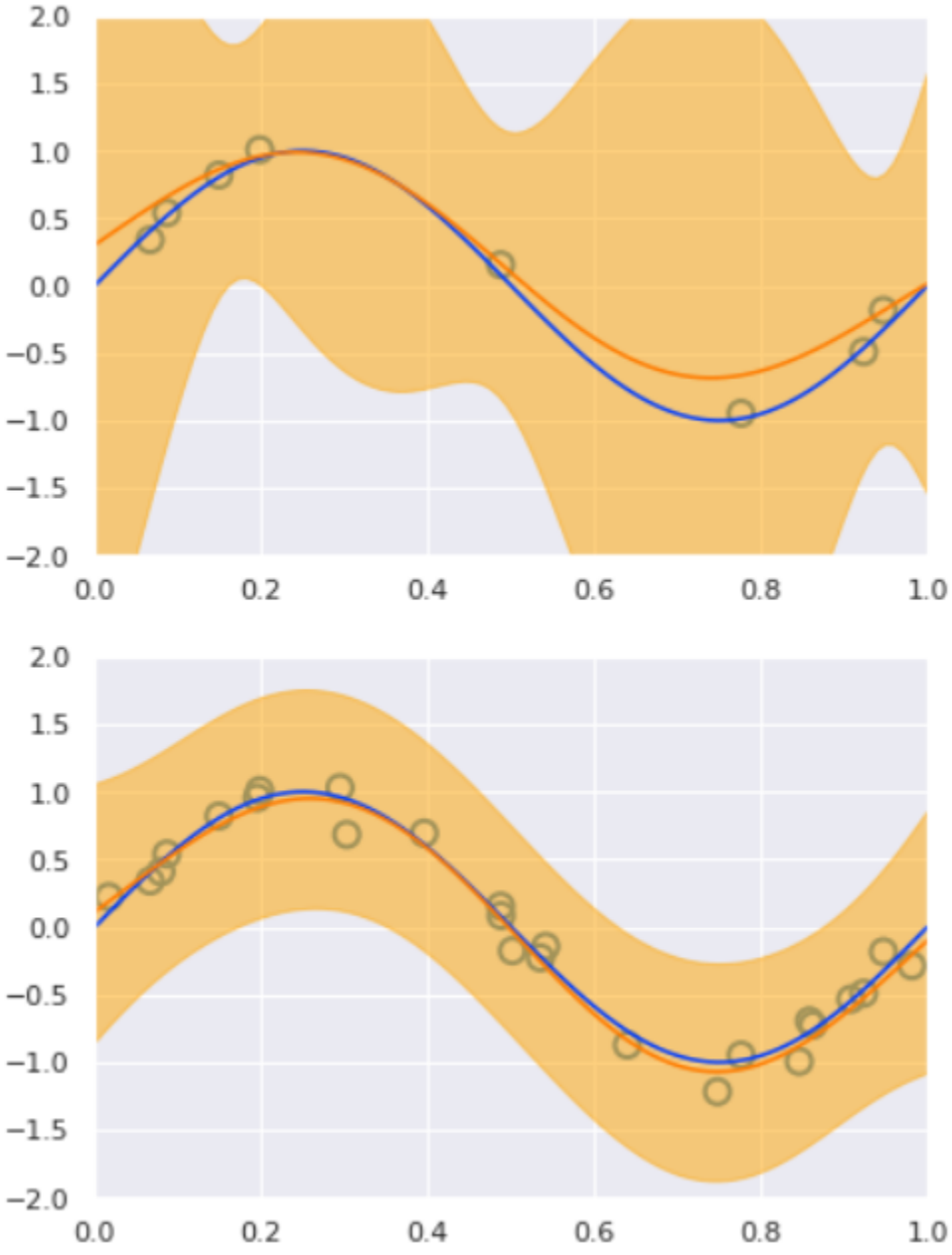

prior/posterior
1.0
0.5
0.0
−0.5
−1.0
w_1
−1.0 −0.5 0.0 0.5 1.0
w_0


prior/posterior
1.0
0.5
0.0
−0.5
−1.0
w_1
−1.0 −0.5 0.0 0.5 1.0
w_0


prior/posterior
1.0
0.5
0.0
−0.5
−1.0
w_1
−1.0 −0.5 0.0 0.5 1.0
w_0


2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
0.0
0.2
0.4
0.6
0.8
1.0


2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
0.0
0.2
0.4
0.6
0.8
1.0
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
0.0
0.2
0.4
0.6
0.8
1.0


2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
0.0
0.2
0.4
0.6
0.8
1.0
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
0.0
0.2
0.4
0.6
0.8
1.0