1 Question 1

1.3

Time (in seconds) to complete standard training: 1359.3467.
Time (in seconds) to complete free adversarial training: 372.3792

1.4

Model/Task	Accuracy	PGD Success rate
Standard	0.9170	0.8928
Adv.-trained	0.8087	0.3763

Adversarial training significantly decreases the PGD succees rate, i.e increases robustness with the price of a small decrease in accuracy.

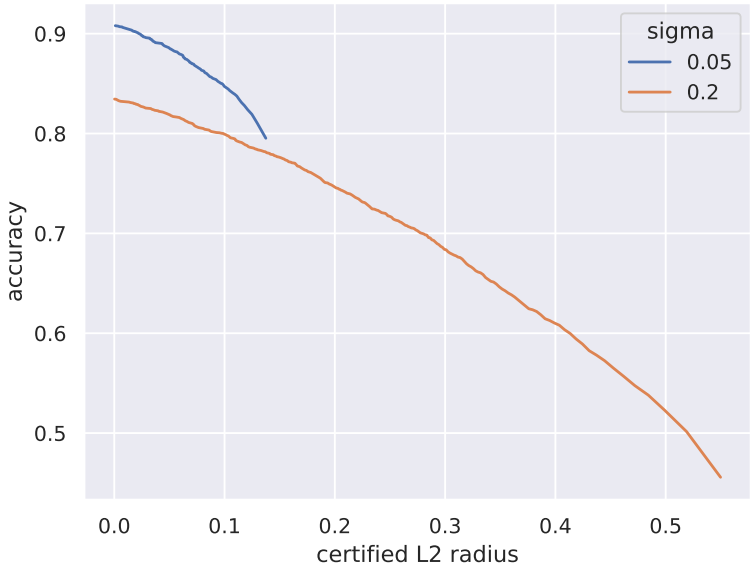
1.5

m/metric	Time	Accuracy	PGD Success rate
4	426.3014	0.8083	0.3790
5	351.1917	0.7847	0.3868
6	290.3951	0.7682	0.3953
7	268.9399	0.7483	0.4095

It seems that both the benign accuracy, robustness and training time decrease as m increases.

2 Question 2

2.2



3 Question 3

3.2

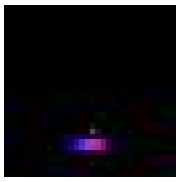
Model 1 is backdoored, the backdoor forces it to output class 0.

3.3

3.3.1

mask:

trigger:



3.3.2

Yes. The accuracy of Model 1 is only very slightly lower than that of Model 2 (0.9107 vs 0.9168).

3.3.3

Very successful, its success rate is 0.9978.