

chapter 2: 2.9.2 Programming assignments

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1 B

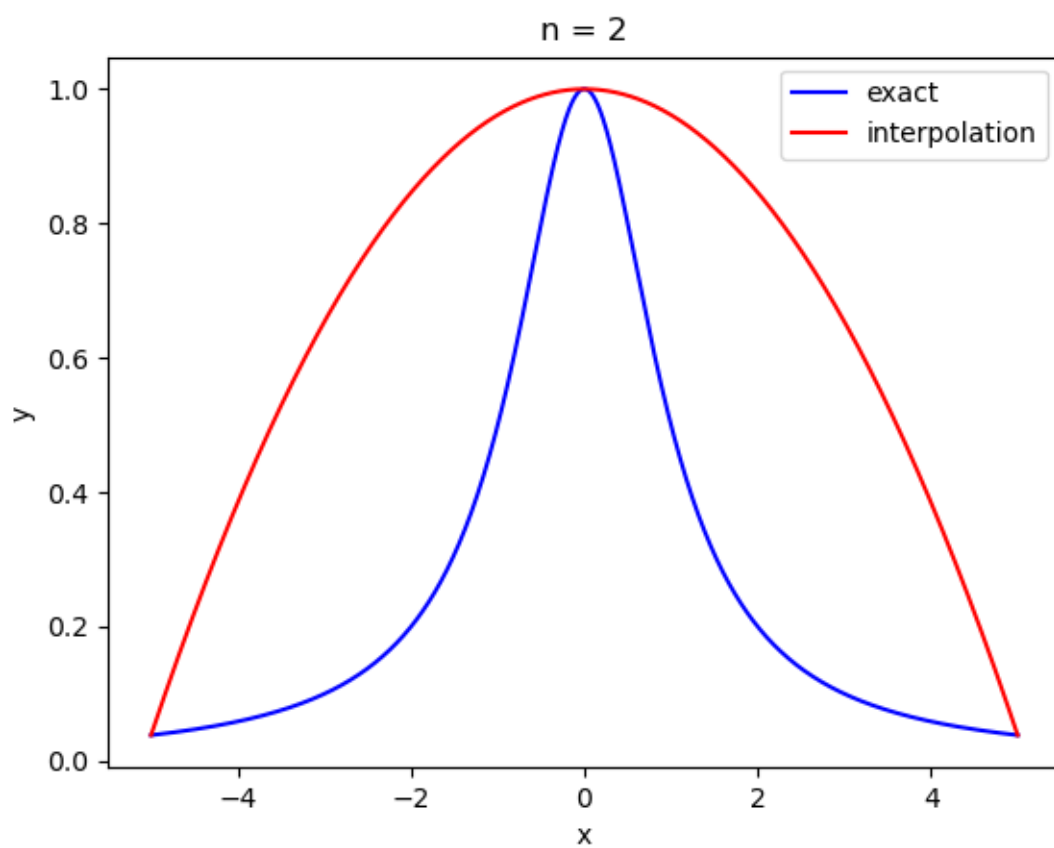


Figure 1: $n=2$

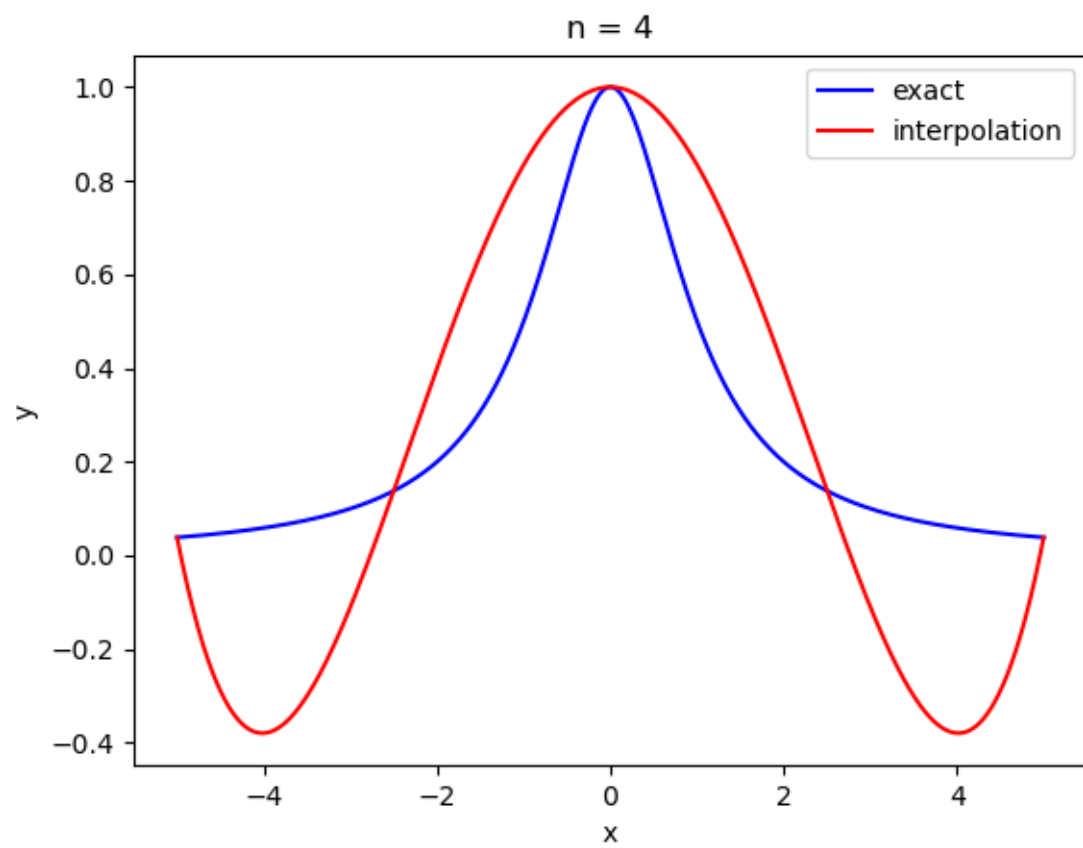


Figure 2: $n=4$

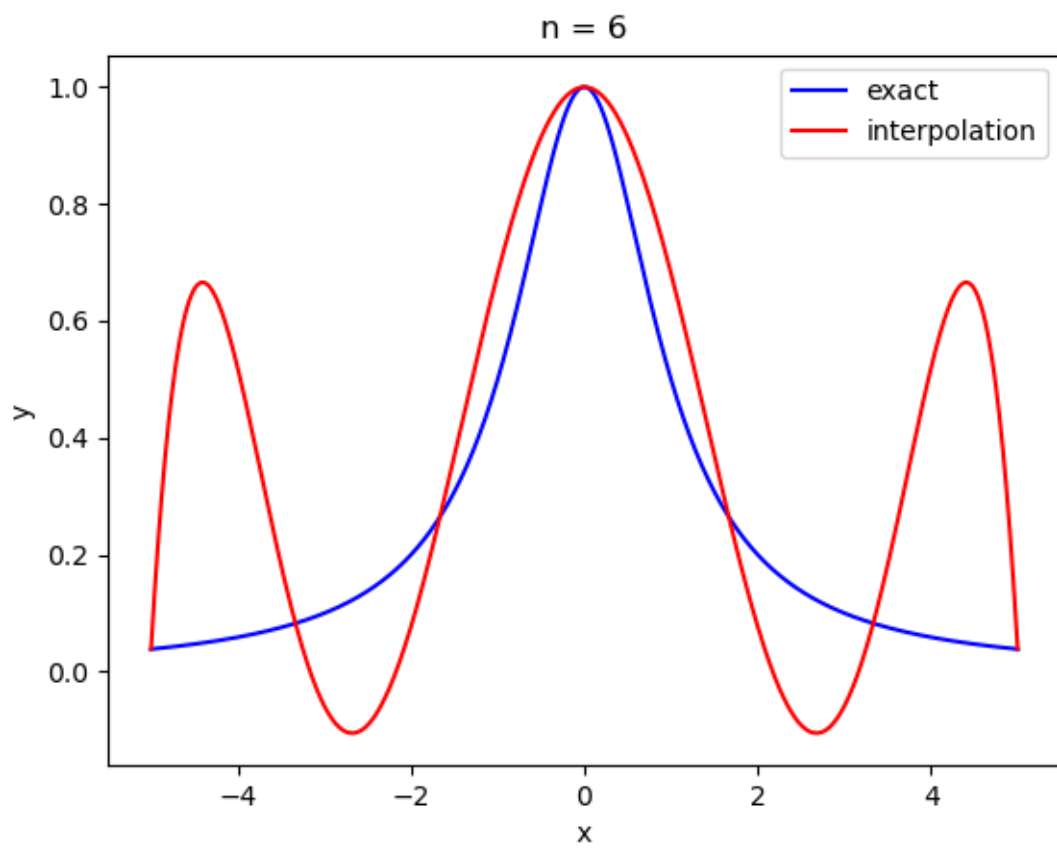


Figure 3: $n=6$

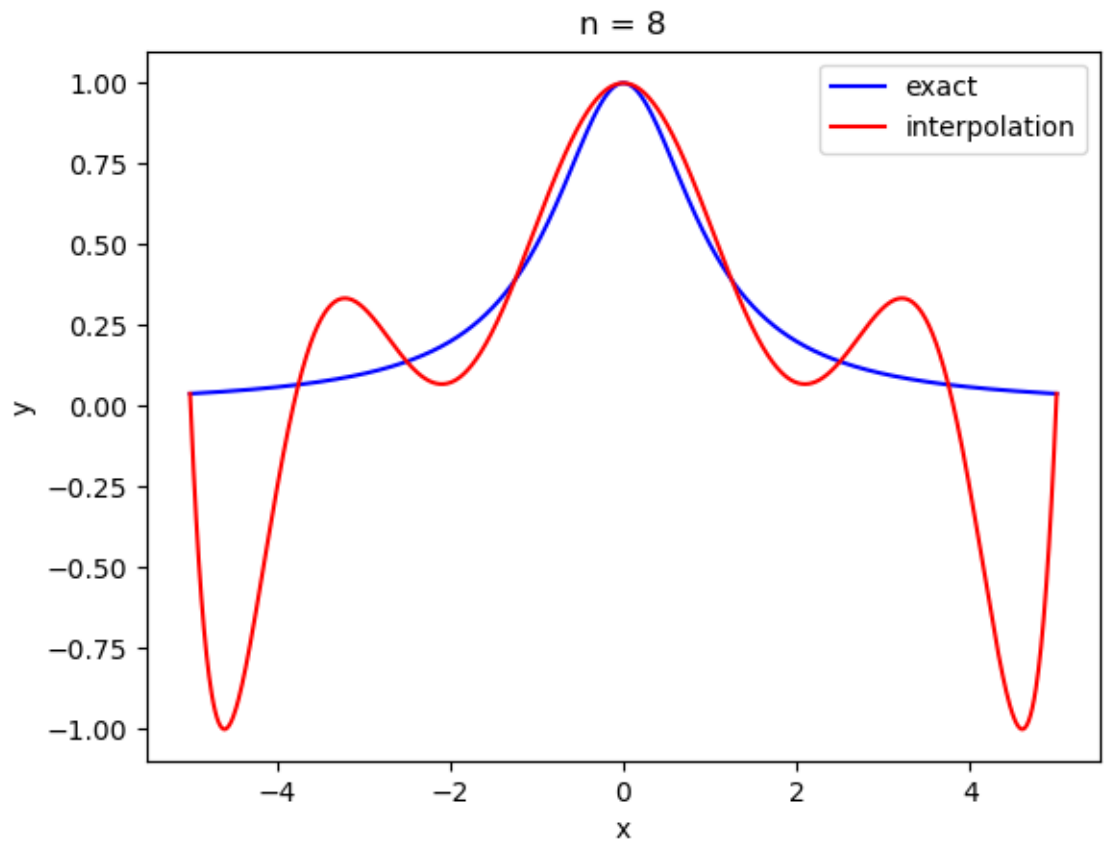


Figure 4: $n=8$

2 C

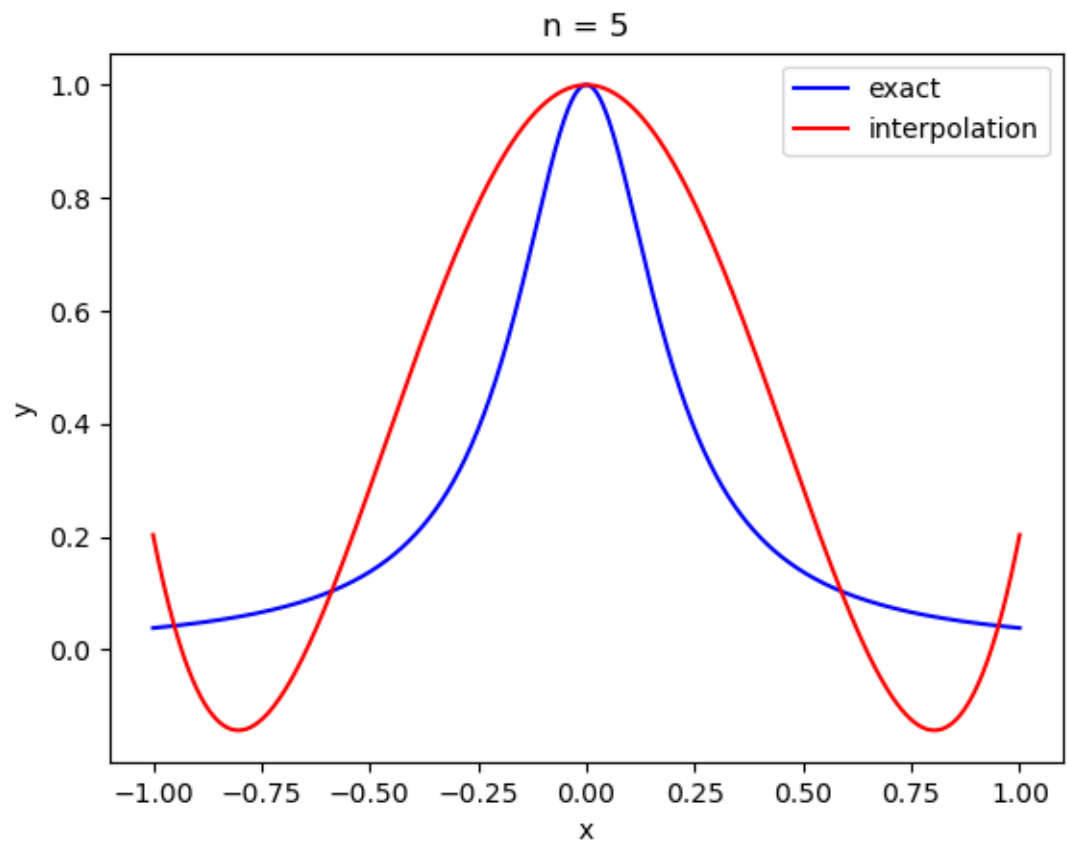


Figure 5: $n=5$

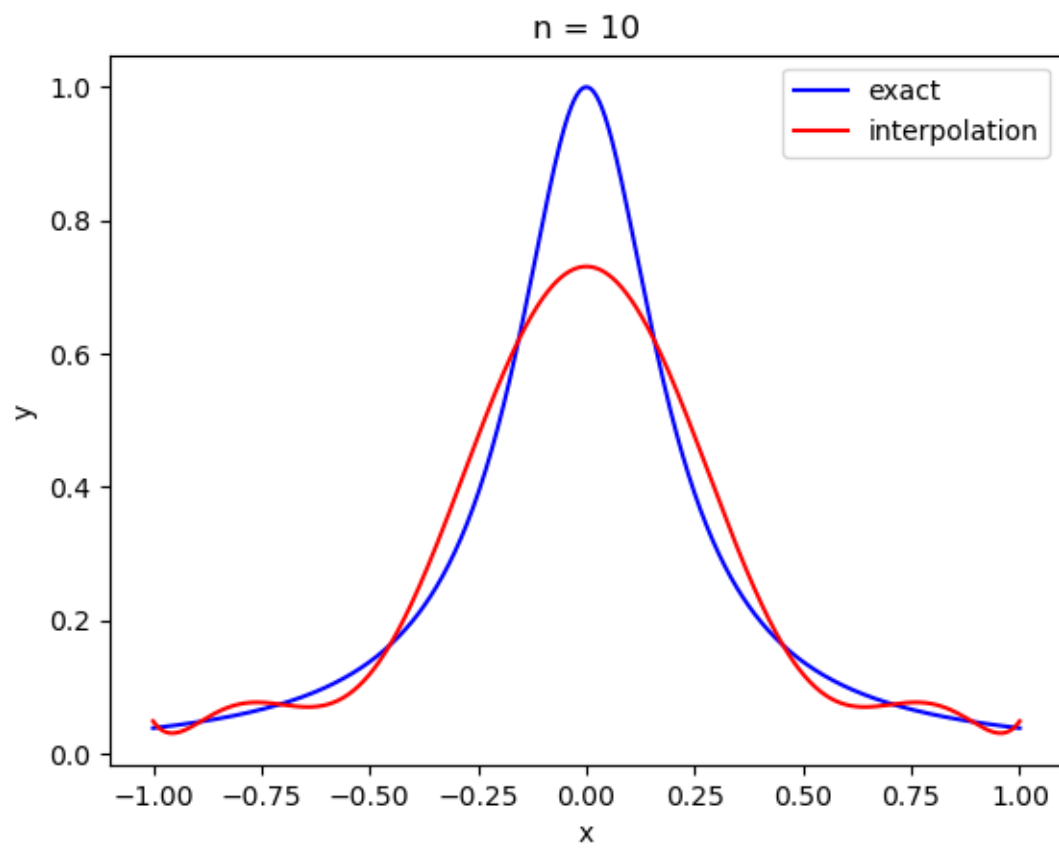


Figure 6: $n=10$

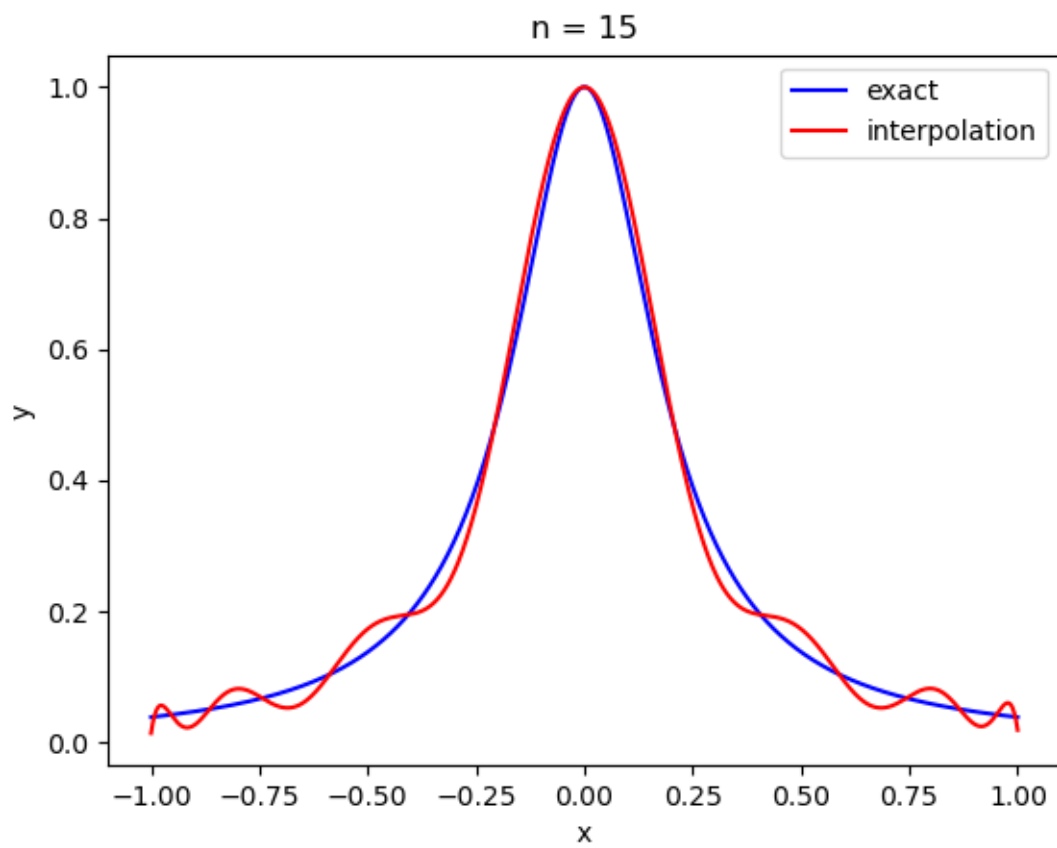


Figure 7: $n=15$

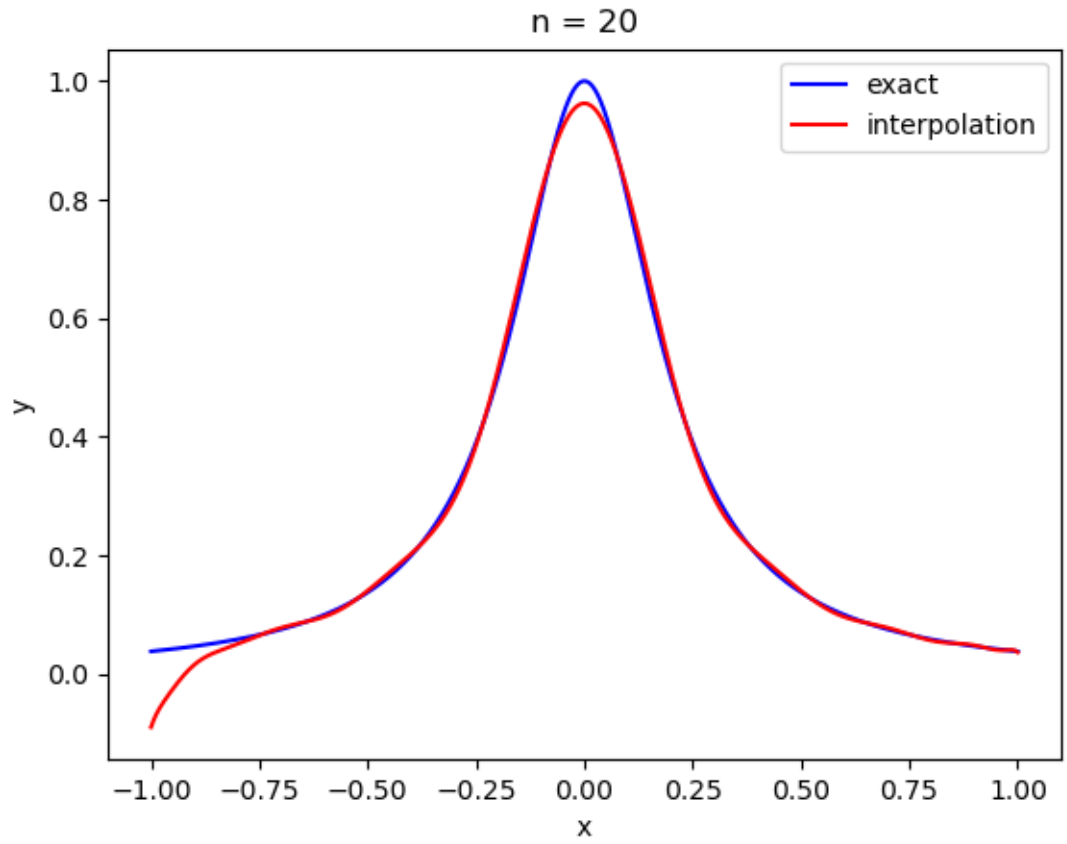


Figure 8: $n=20$

3 D

3.1 (a)

The velocity of the car at $t=10$ is 69.1259 m/s.

3.2 (b)

The car's speed exceeds 81 m/s between $t = 0.247247$ and $t = 0.975976$

The car's speed exceeds 81 m/s between $t = 11.8028$ and $t = 12.8569$

4 E

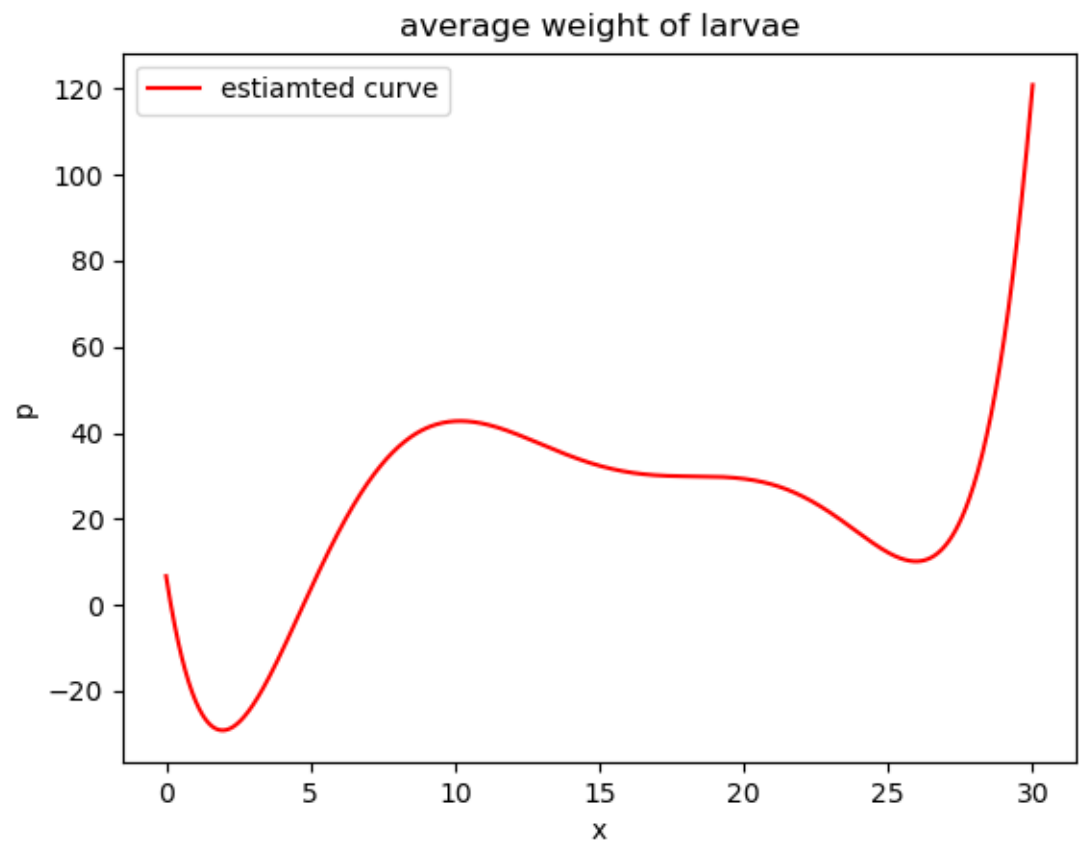


Figure 9: young tree

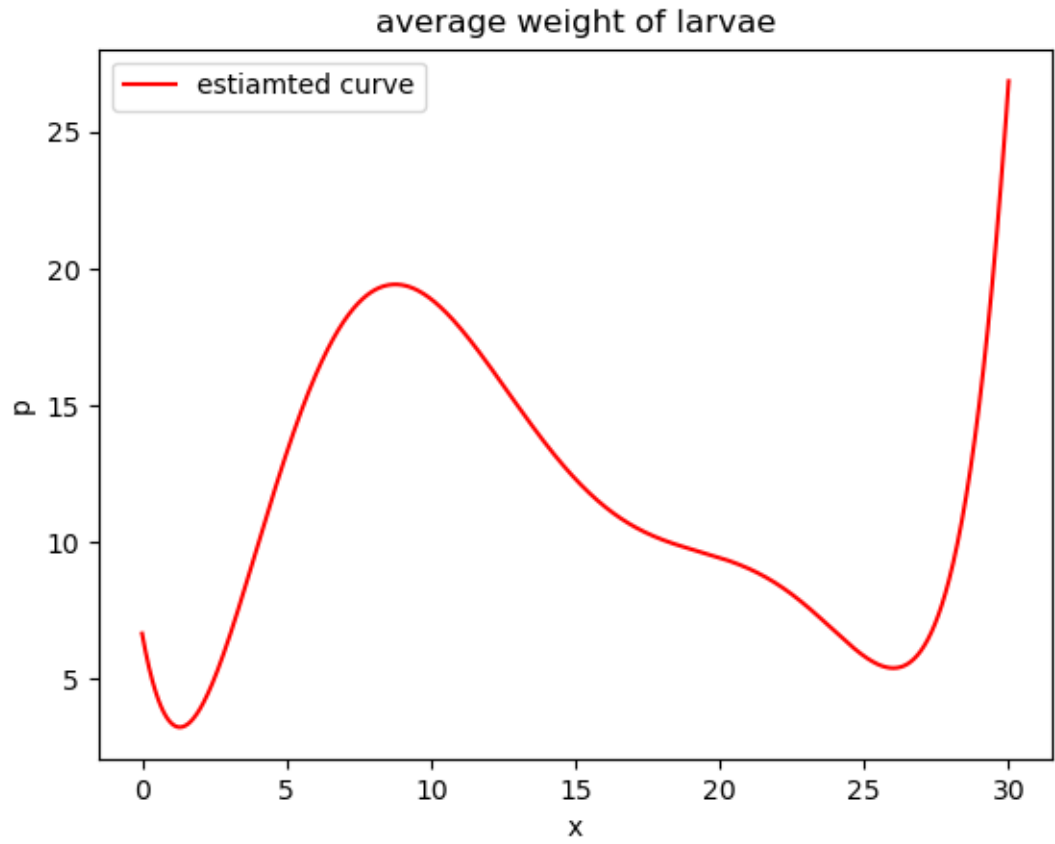


Figure 10: old tree

As we can see from the graphs the weight of larvae exploded because of the Runge phenomenon, so we can't accurately predict the weight of larvae in the future.