





Example 1.b: Cosine initial data

$$q_t + qq_x + \delta^2 q_{xxx} = 0, \quad x \in [0, 2\pi), \quad t > 0,$$

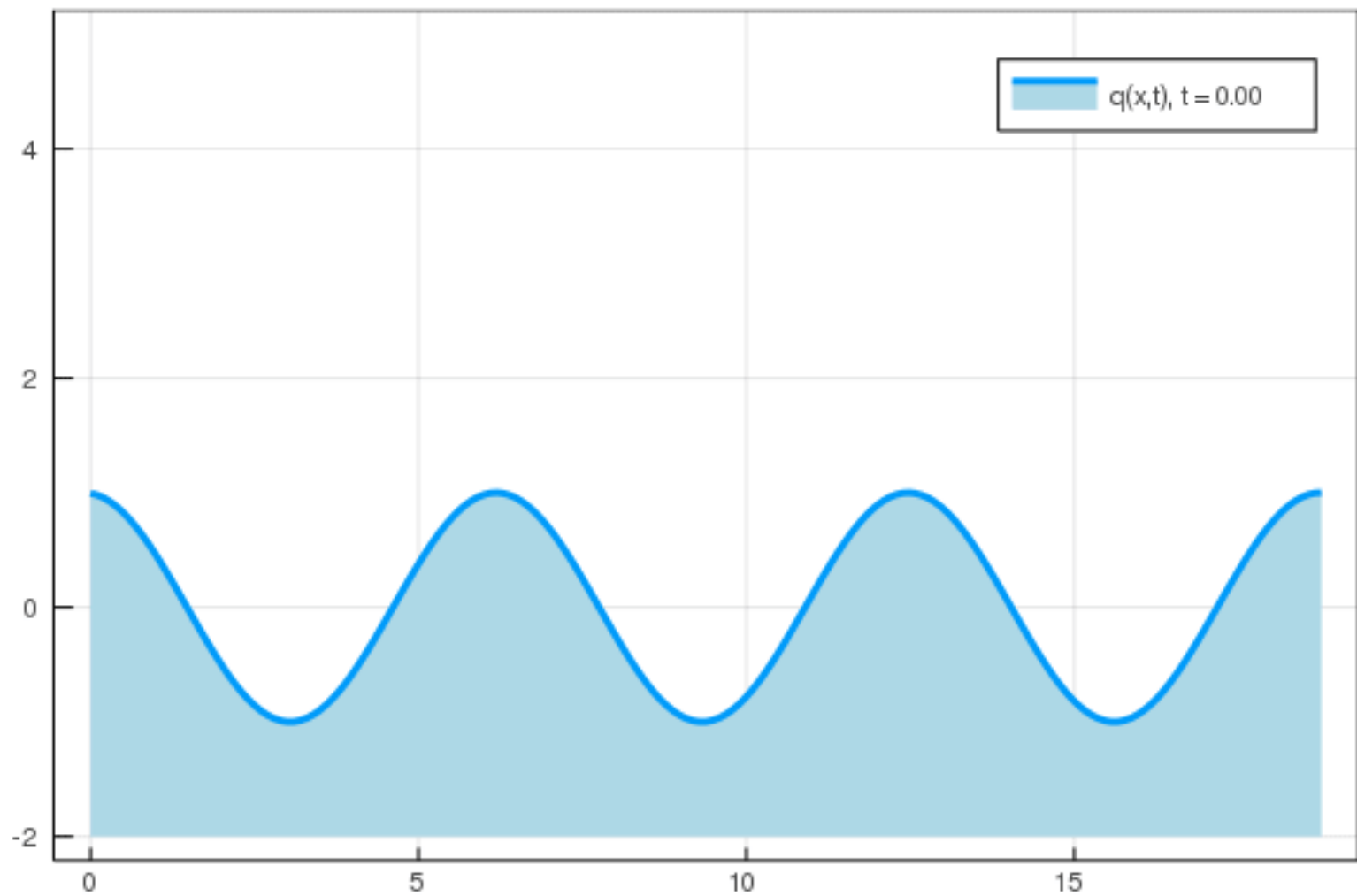
$$q(x, t) = q(x + 2\pi, t),$$

$$q(x, 0) = \cos(x).$$

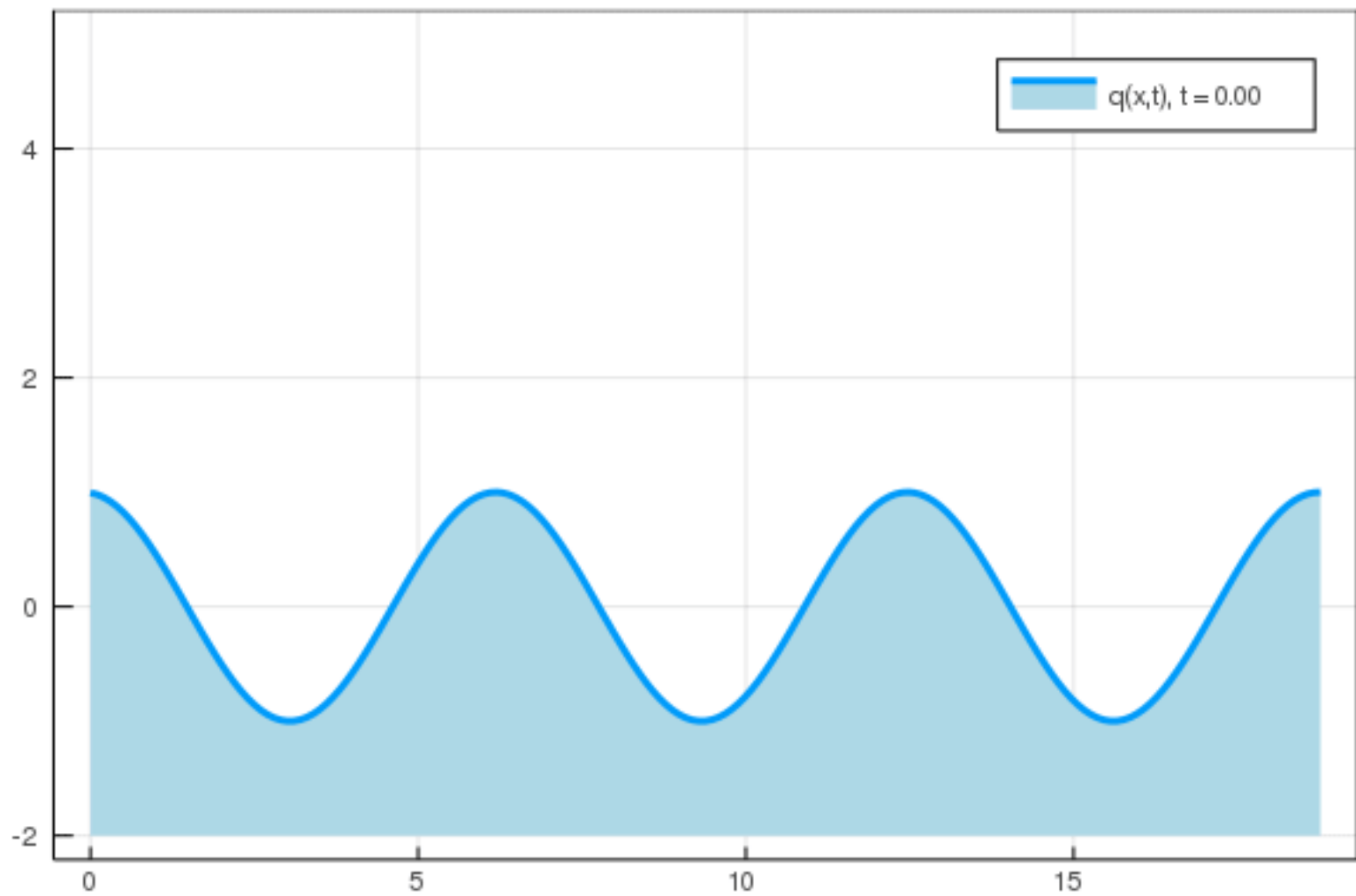


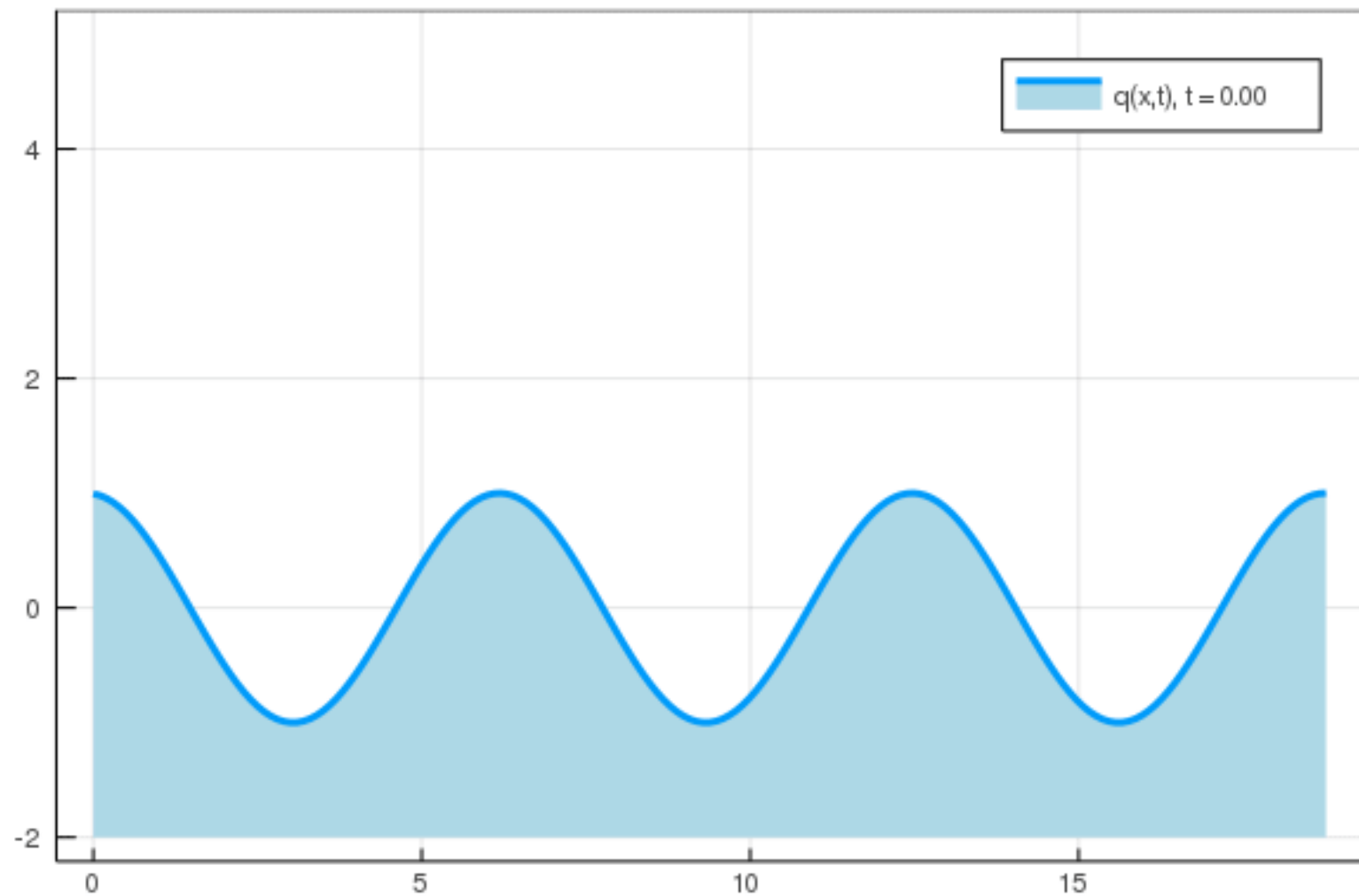
```
15-element Array{Float64,1}:  
 0.7502135124881996  
 0.5386340453480183  
 0.24496395819929884  
 0.051437346110983384  
 0.004812627884122733  
 0.0002649828722747216  
 9.895849066410278e-6  
 2.6906509198454387e-7  
 5.577151185320872e-9  
 9.101519538035063e-11  
 9.9298347322474e-13  
 1.4033219031261979e-13  
 5.684341886080802e-14  
 2.4868995751603507e-14  
 6.821210263296962e-13
```

```
15x2 Array{Float64,2}:  
 -0.589564      0.160649  
  0.180168      0.718802  
  0.873261      1.11822  
  1.58261       1.63404  
  2.4224        2.42721  
  3.44882       3.44908  
  4.67026       4.67027  
  6.08488       6.08488  
  7.69112       7.69112  
  9.48816       9.48816  
 11.4755        11.4755  
 13.653         13.653  
 16.0203        16.0203  
 18.5774        18.5774  
 21.3242        21.3242
```











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$$q(x, t) = q(x + 2\pi, t),$$

$$q(x, 0) = \cos(x).$$

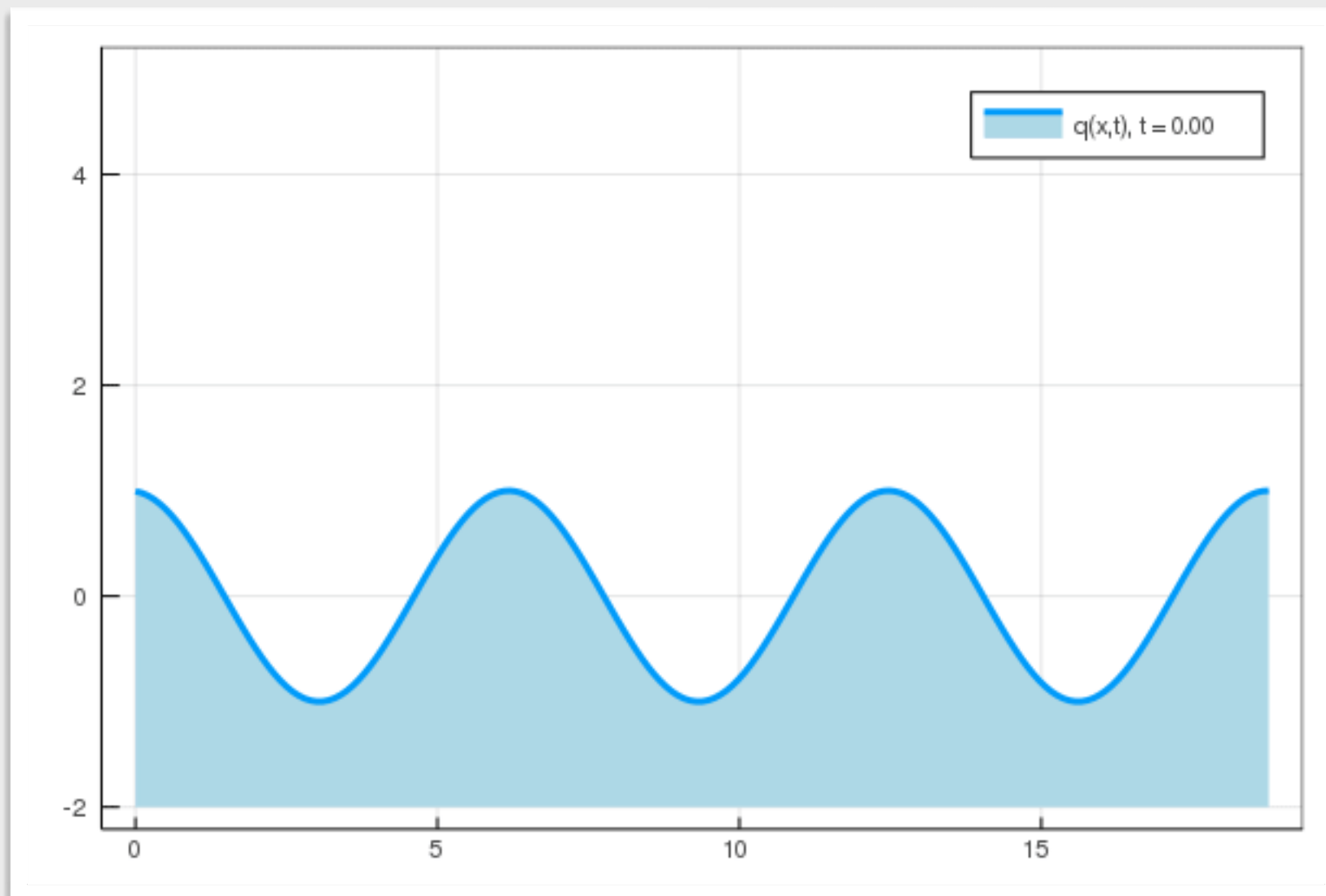
$$\delta = 0.08$$

15x2 Array{Float64,2}:

|           |          |
|-----------|----------|
| -0.589564 | 0.160649 |
| 0.180168  | 0.718802 |
| 0.873261  | 1.11822  |
| 1.58261   | 1.63404  |
| 2.4224    | 2.42721  |
| 3.44882   | 3.44908  |
| 4.67026   | 4.67027  |
| 6.08488   | 6.08488  |
| 7.69112   | 7.69112  |
| 9.48816   | 9.48816  |
| 11.4755   | 11.4755  |
| 13.653    | 13.653   |
| 16.0203   | 16.0203  |
| 18.5774   | 18.5774  |
| 21.3242   | 21.3242  |

15-element Array{Float64,1}:

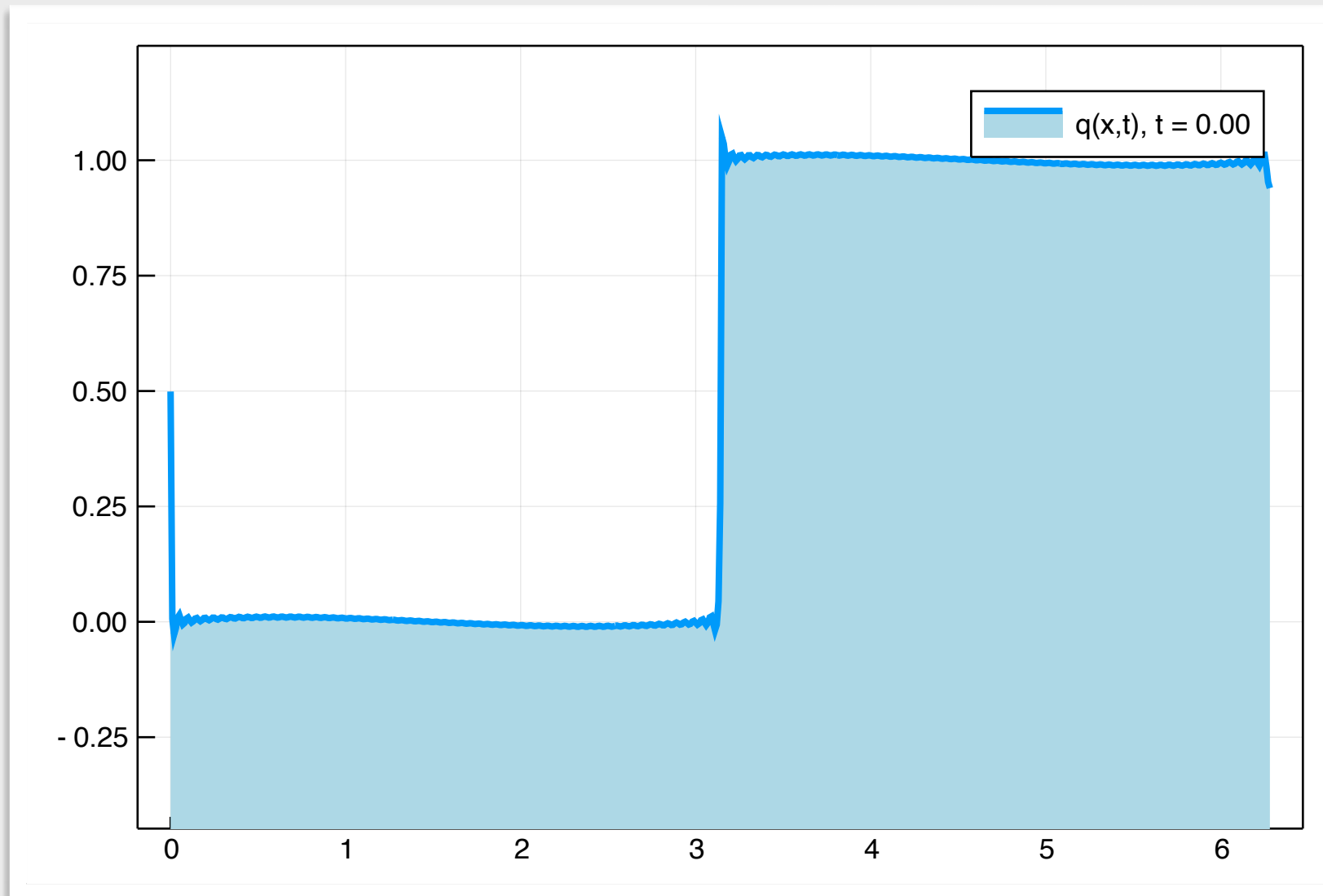
```
0.7502135124881996
0.5386340453480183
0.24496395819929884
0.051437346110983384
0.004812627884122733
0.0002649828722747216
9.895849066410278e-6
2.6906509198454387e-7
5.577151185320872e-9
9.101519538035063e-11
9.9298347322474e-13
1.4033219031261979e-13
5.684341886080802e-14
2.4868995751603507e-14
6.821210263296962e-13
```



# Example 2: Box initial data

```
15x2 Array{Float64,2}:  
 0.741222  1.37712  
 5.55776   5.59924  
12.9665    13.1779  
23.5656    23.576  
37.0062    37.1333  
53.567     53.5716  
73.0236    73.1144  
95.5675    95.5701  
121.033    121.104  
149.568    149.569  
181.04     181.097  
215.568    215.569  
253.044    253.093  
293.568    293.569  
337.047    337.09
```

```
15-element Array{Float64,1}:  
 0.6359018908896819  
 0.04147733235161155  
 0.2113546080508364  
 0.010408104108485361  
 0.12714520472930957  
 0.00462806160194873  
 0.09088125078505982  
 0.0026036842293706286  
 0.07070536357541357  
 0.0016664716588934425  
 0.057858044737173486  
 0.001157314045201474  
 0.04896078275695004  
 0.0008502899631821492  
 0.04243483494468592
```



Genus 500 approximation

