Advanced Macro
Assignment 3

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Interpolation

Julia code: click here.

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# Julia code
# See A3.jl
```

Newton basis polynomial interpolation

Function	n=4	n=6	n=11
Log	0.0009543	$9.481 \cdot 10^{-06}$	$1.391 \cdot 10^{-11}$
Square	0.001947	$1.934 \cdot 10^{-05}$	$2.838 \cdot 10^{-11}$
CES $\sigma = 2$	0.0006884	$6.839 \cdot 10^{-06}$	$1.003 \cdot 10^{-11}$
CES $\sigma = 5$	$2.151 \cdot 10^{-05}$	$2.137 \cdot 10^{-07}$	$3.135 \cdot 10^{-13}$
CES $\sigma = 10$	$2.988 \cdot 10^{-07}$	$2.968 \cdot 10^{-09}$	$4.355 \cdot 10^{-15}$

Table 1. Upper bound error for polynomial interpolation.
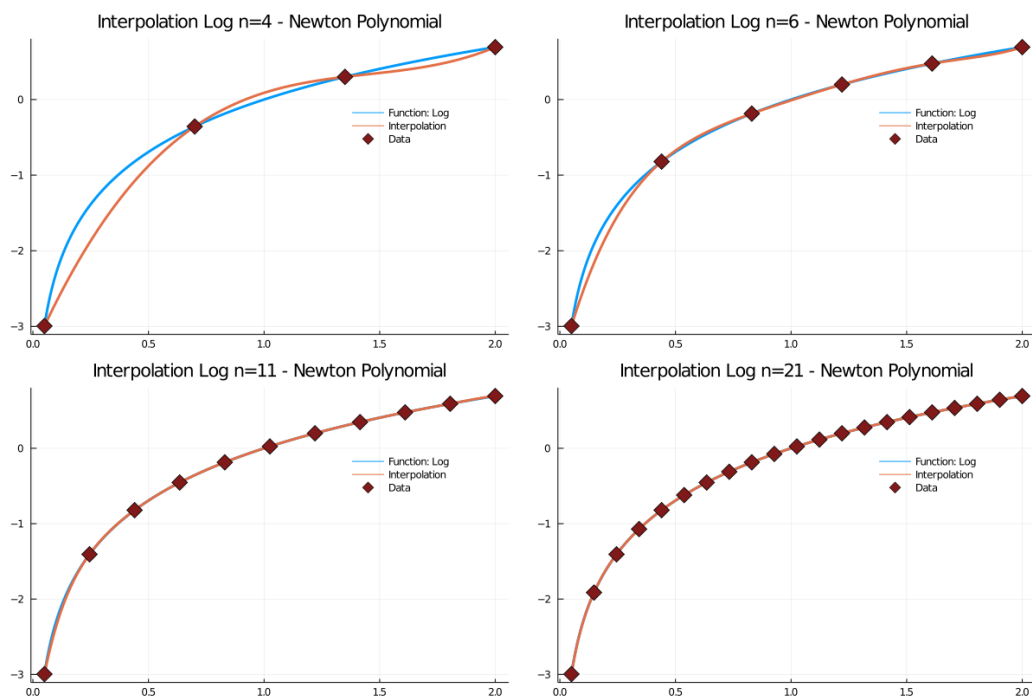
Cubic Spline: Natural

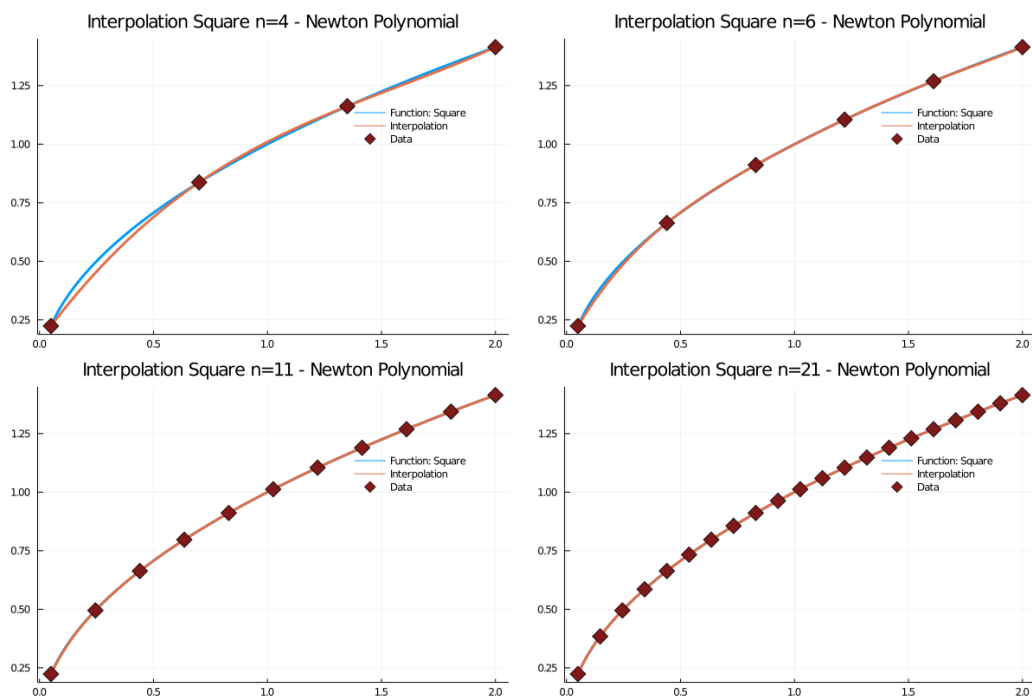Figure 1: Interpolation Newton Log Fn

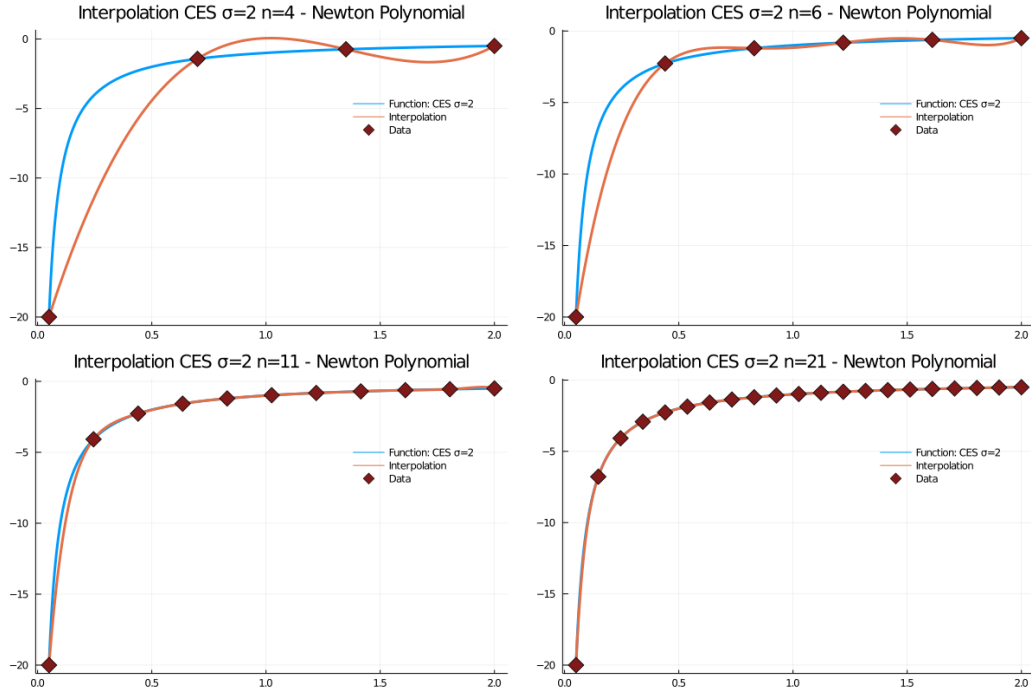Figure 2: Interpolation Newton Root Square Fn

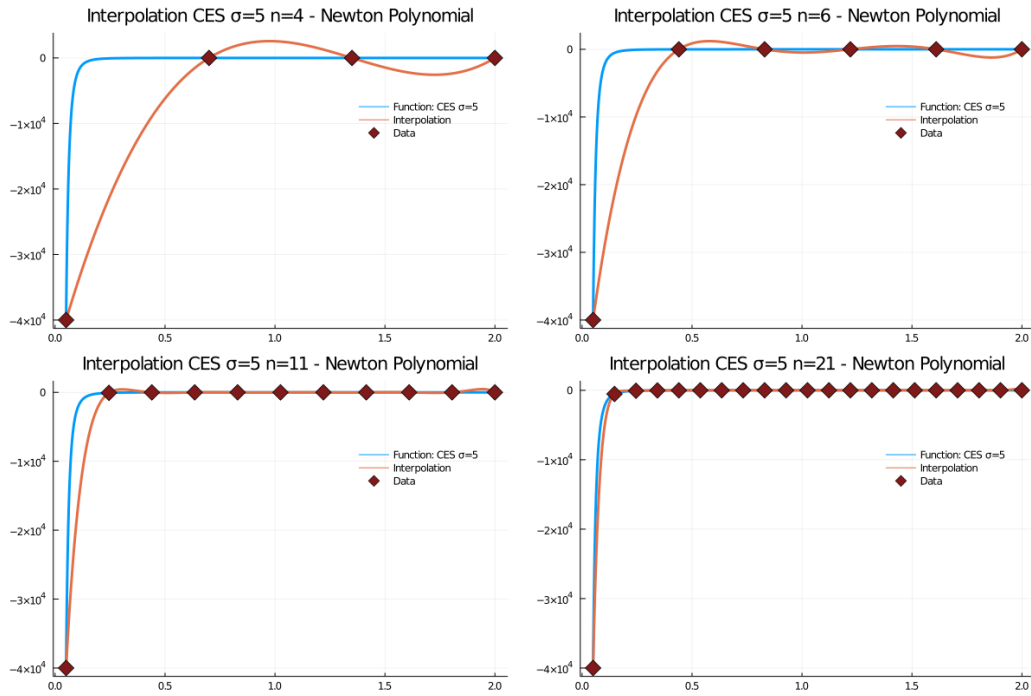Figure 3: Interpolation Newton CES sigma 2 Fn
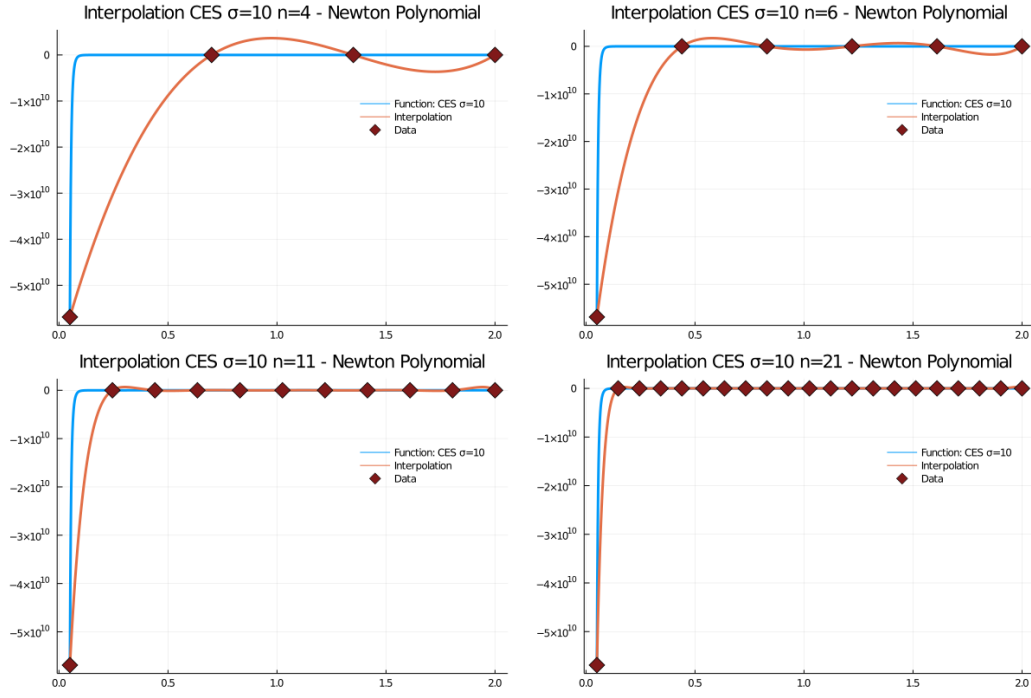

Figure 4: Interpolation Newton CES sigma 5 Fn

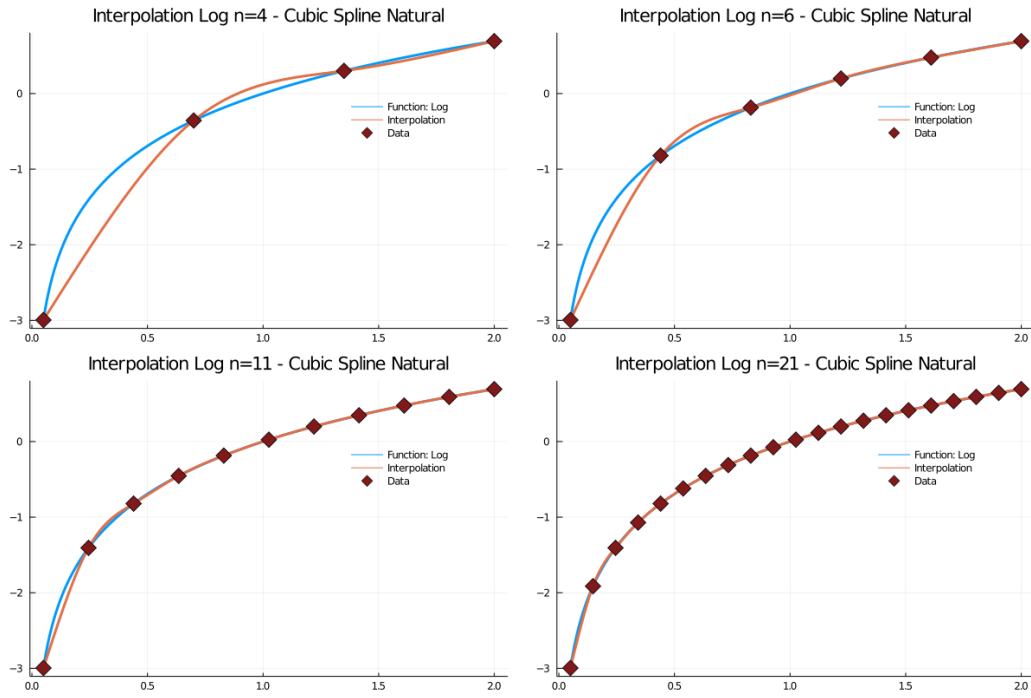Figure 5: Interpolation Newton CES sigma 10 Fn

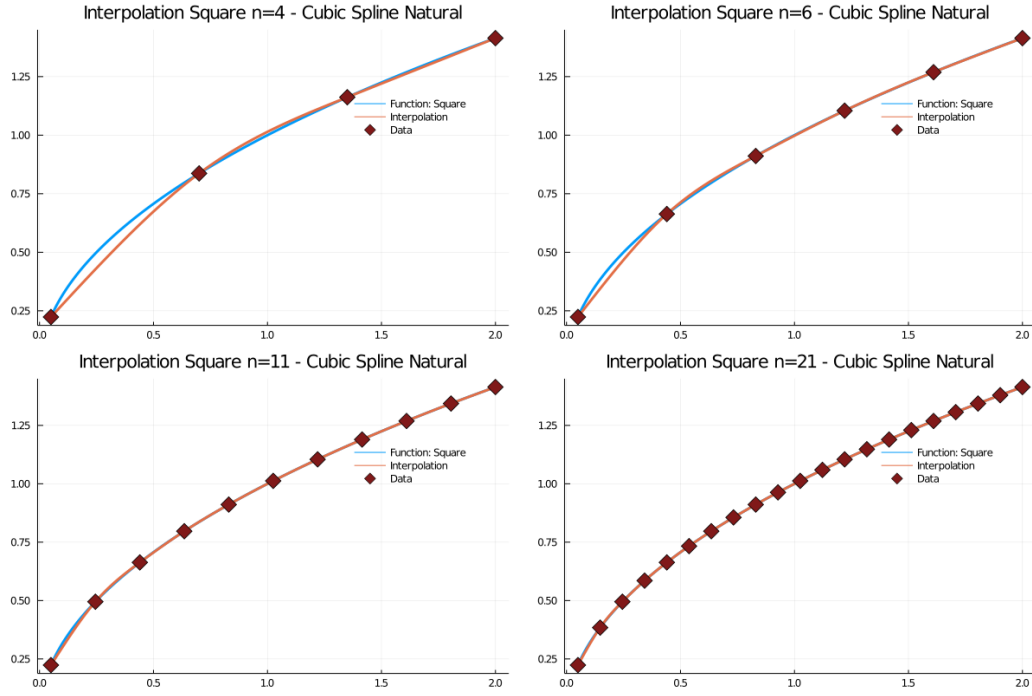Figure 6: Interpolation Natural Cubic Spline Log Fn

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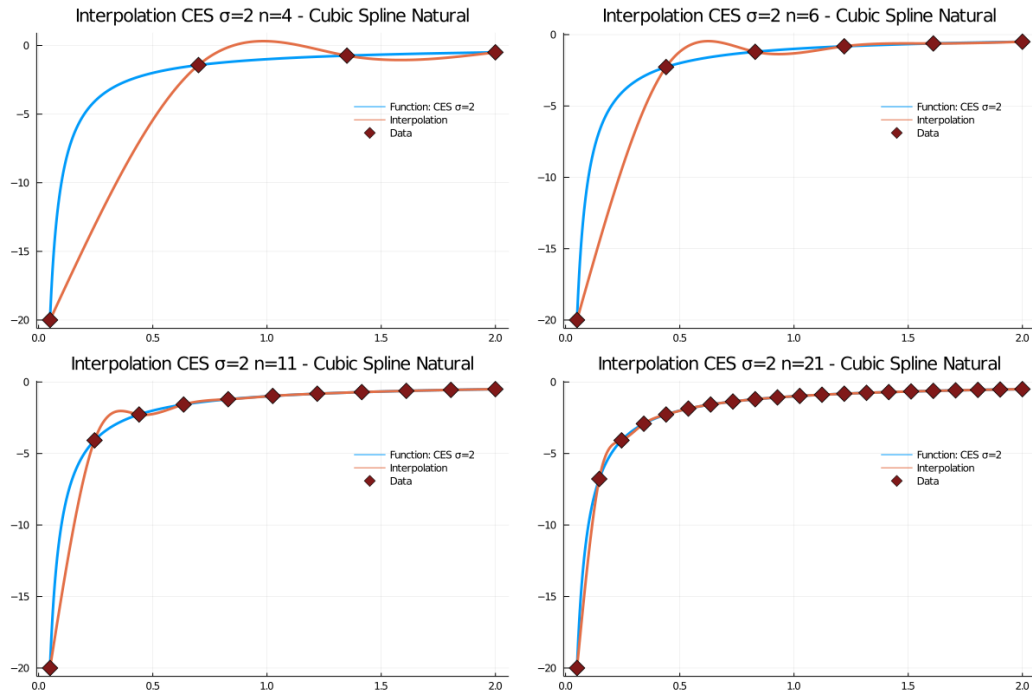Figure 7: Interpolation Natural Cubic Spline Root Square Fn

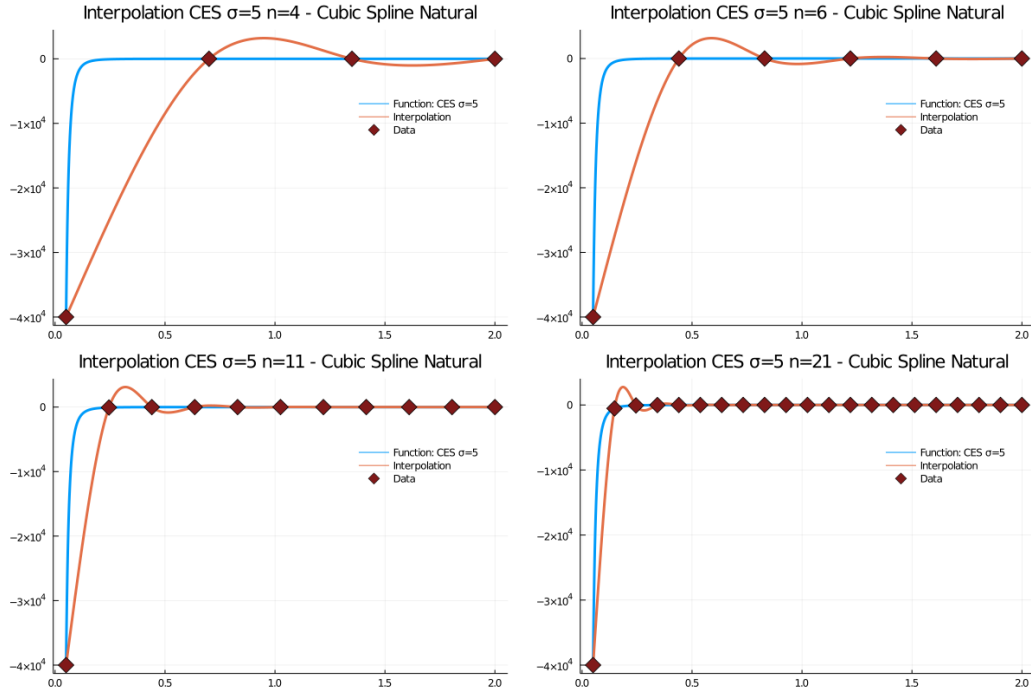Figure 8: Interpolation Natural Cubic Spline CES sigma 2 Fn

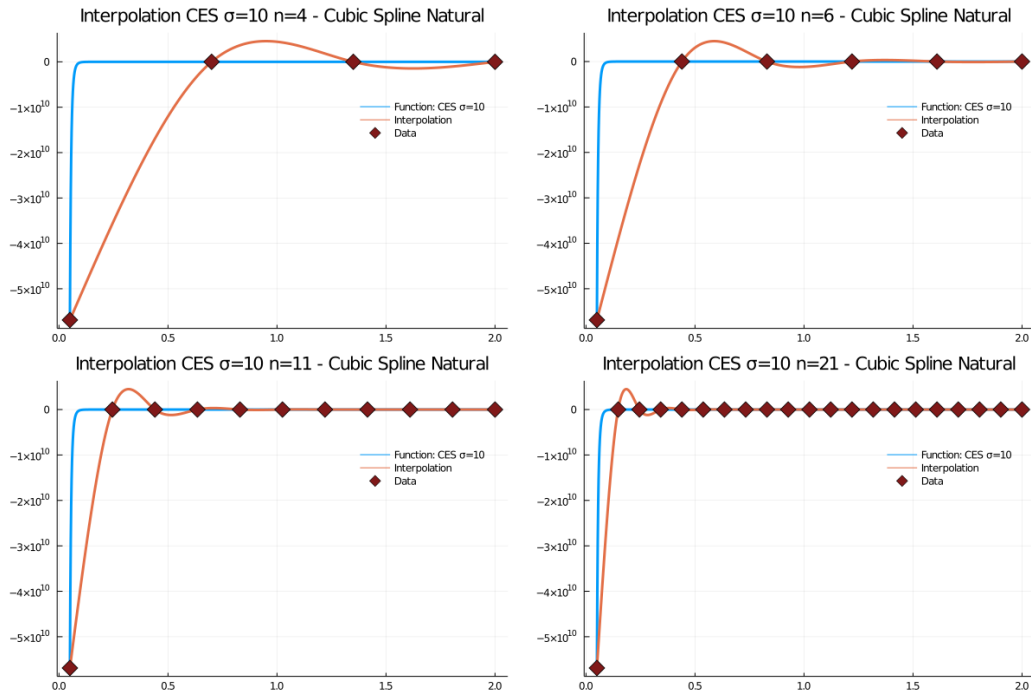Figure 9: Interpolation Natural Cubic Spline CES sigma 5 Fn

Figure 10: Interpolation Natural Cubic Spline CES sigma 10 Fn