

## Math 128A Quiz 4

1)(5 pts) Let  $f(-1) = 1$ ,  $f(0) = 0$ , and  $f(1) = 1$ . Find the natural cubic spline for this data.

2)(5 pts) Let  $f$  be infinitely differentiable. Find, with justification, the order of the following approximation to  $f'(x)$ .

$$f'(x) \approx \frac{-4f(x-h) + 3f(x) + f(x+2h)}{6h}. \quad (\text{Hint: Use Taylor's formula with remainder})$$