7.2 Review Questions

7.2.R1

1/1 point (graded)

Why are natural cubic splines typically preferred over global polynomials of degree d?

- [ ] Polynomials have too many degrees of freedom
- [x] Polynomials tend to extrapolate very badly
- [ ] Polynomials are not as continuous as splines

✔

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✔ Correct (1/1 point)

7.2.R2

1/1 point (graded)

Let $1\{x \leq t\}$ denote a function which is 1 if $x \leq t$ and 0 otherwise.

Which of the following is a basis for linear splines with a knot at t? Select all that apply:

- [x] $1, x, (x-t)\,1\{x > t\}$
- [x] $1, x, (x-t)\,1\{x \leq t\}$
- [ ] $1\{x > t\}, 1\{x \leq t\}, (x-t)\,1\{x > t\}$
- [x] $1, (x-t)\,1\{x \leq t\}, (x-t)\,1\{x > t\}$

✔

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✔ Correct (1/1 point)