

# DYNAMICAL SYSTEMS, MATH 117, HW#6

---

Exercises 12.1, 12.5, 12.6, 12.7, 12.8, and the following problem:

## Problem 1.

Show that Schwarzian of the function  $f$  can be also defined as

$$Sf(x) = \left(\frac{f''}{f'}\right)' - \frac{1}{2} \left(\frac{f''}{f'}\right)^2$$

## Problem 2.

Show that the map

$$f(x) = \frac{1}{3}x^3 - \frac{a+b}{2}x^2 + abx + c$$

cannot have more than two attracting periodic orbits for any parameters  $a, b, c$  with  $a \neq b$ .