

MA 771 Exercises

3.4. Robinson 5.25 (p. 209)

3.5. Robinson 5.29 (p. 209)

3.6. Consider the maps  $f : \mathbb{R} \rightarrow \mathbb{R}$  and  $T : \mathbb{R} \rightarrow \mathbb{R}$  given by  $f(x) = -1 + 2x + \cos x$  and  $T(x) = 2x$ .

- (a) Construct a conjugacy between  $f$  and  $T$  using fundamental domains. How many such conjugacies can you construct in this way?
- (b) In the proof of the Hartman-Grobman Theorem, a *unique* conjugacy is constructed. Why doesn't your answer to Part (a) contradict the proof?