

MATH 53 WORKSHEET : Binary fractions

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a) First integers : find 61 in binary :

What is a recipe which works for any number, eg 17513? (ie algorithm) (Don't do it!)

b) Fractions : What fraction is $0.\overline{101}$?

c) Find $\frac{1}{7}$ in binary :

d) Show how the algorithm for getting binary expansion is the same as applying $2x \pmod{1}$ map.

e) So precisely which $x \in [0, 1]$ give chaotic orbits ?

