MATH 53 WORKSHEET

Transition graphs.

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tine, interruptory ment financeses, FTCA (Section Reserve), or improfiles pass in

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The Contractor agrees that all materials related to or precinced by the ground of my of the ground of performing services under this agreement are the sole property of the rootaker. Producer may use and otherwise alter at its sole discretion the produces of Contractor's services becreased in any manner. The Contractor agree that Producer owns all rights to the Program, including copyright, intle, and interest in the results of producer owns all rights. Contractor's services (contractor and Contractor has no claim to bear first the reducer of the Program and any character may device may device of the Producer may develop, distribute any further of the Contractor whatsoever blicholas (Lee has full right to use any argument of the contractor whatsoever blicholas (Lee has full right to use any argument of the contractor whatsoever blicholas (Lee has full right to use any argument of the contractor whatsoever blicholas (Lee has full right to use any argument of the contractor whatsoever blicholas (Lee has full right to use any argument of the contractor)

Draw the transition graph above. Wint: does f(I) > I?

ete ...

Prote there's a fixed point of f in J:

Prove there's a fixed pt of \$2 with pieI, pieK:

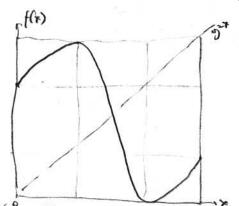
Categorize all possible infinite sequences of symbols:

eg is FI legal? What if start with J?

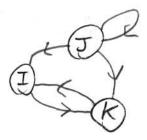
Prove that the periodic orbits of f have period I or 2, no others:

SOCUTION 5

Consider the following map



[see T3.11]



Note: $J \to I$ means $f(J) \supset I$, not that there is nor such $x \in J$ with $f(x) \in I$!

Draw the transition graph above.

Hint: does $f(I) \supset I ? \times f(I) \supset K ? / etc...$

Proke there's a fixed point of f in J: . f(J) > J so by Fixed Pt Thm, I fixed pt. in J.

Prove there's a fixed pt of 52 with piet, prEK $f^{2}(I) = f(f(I)) = f(K \cup \{possible atter\}) \supset I So$ Categorize all possible in finite sequences of symbols:

Proof: apply fixed pt Thun.

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g is KI legal? What if start with J?

Jn KI

Jn FK

N=0,1,...

Prove that the periodize orbits of f have period of I ar 2, no others:

no odd POS >1 since: i) they cannot be in I or K because IxxI is not possible

The eron number of symbols. ii) In J, 52h+1 is monotonic decreasing (k=1,3...) so p2>p1 => f2k+1(p2) < f2k+1p1

Applying to the PO Epi, piker? leads to a contradiction since f2k+1(pj) = Pi +j=1.-2k1 no even POs > 2 since f monot. incr. in both I kK, so f2 monot. incr. in both I kK 50 if \{p_1, ... pk} is period-2k then \{2\{p_1, ... pk}\} preserves the ordering = contradiction since \{2\number number} permite