

## Q-reducibility and m-reducibility on computably enumerable sets

Batyrshin I.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

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### Abstract

© 2014, Pleiades Publishing, Ltd. We study the distinctions between Q-reducibility and m-reducibility on computably enumerable sets. We construct a noncomputable m-incomplete computably enumerable set B such that all computably enumerable sets  $A \leq_Q B$  satisfy  $A \leq_m B$ . We prove that for every noncomputable computably enumerable set A there exists a computably enumerable set B such that  $A \leq_Q B$  but  $A \not\leq_m B$ . We prove that for every simple set B there exists a computably enumerable set A such that  $A \leq_Q B$  but  $A \not\leq_m B$ . The last result implies in particular that the Q-degree of every simple set contains infinitely many computably enumerable m-degrees.

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### Keywords

computably enumerable set, m-reducibility, Q-reducibility, simple set