

ABSTRACT. There is only one reasonable definition of *kernel partition regularity* over any subsemigroup of the reals. On the other hand, there are several reasonable definitions of *image partition regularity*. We establish the exact relationships that can hold among these various notions for finite matrices and infinite matrices with rational entries. We also introduce some hybrid notions and describe their relationship to what is probably the major unsolved problem in kernel partition regularity, namely whether an infinite matrix which is kernel partition regular over \mathbb{Q} must be kernel partition regular over \mathbb{N} .