

HW #8 Homomorphisms - Answers

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Pat Rossi

Name _____

In Exercises 1-9, determine whether or not the given function defines a homomorphism. If ϕ IS an isomorphism, identify $\ker(\phi)$.

1.

ϕ IS a homomorphism. $\ker(\phi) = \{0\}$

2.

ϕ IS a homomorphism. $\ker(\phi) = \{0\}$

3.

ϕ IS a homomorphism. $\ker(\phi) = \{1\}$

4.

ϕ IS a homomorphism. $\ker(\phi) = \{1\}$

5.

ϕ IS a homomorphism. $\ker(\phi) = \{0, 2, 4\}$

6.

ϕ is NOT a homomorphism.

7.

ϕ IS a homomorphism. $\ker(\phi) = \{0\}$

8.

ϕ is NOT a homomorphism.

9.

ϕ is NOT a homomorphism.