3.   H ⟹ Set of all integers divisible by 13-3=10

   h ∈ 10Z   in   (H, +) = (10Z, +)

   Requirements of a group...

                                                    {b, c} ⊂ Z

   ① Closed:

      → 10 + 10b + 10c = 10(1 + b + c)
                              ‿
                         always divides 10

      so any member in the set + another member returns a member of
      the set

   ② Associative: {a, b, c} ⊂ Z

      → 10a + (10b + 10c) = 10a + 10b + 10c = (10a + 10b) + 10c

      Follows from rules of arithmetic that (H, +) is associative

   ③ Identity: {a, b, c) ⊂ Z

      → 0 ∈ 10Z
      → 10a + 0 = 10a   making 0 the identity element of 10Z

   ④ Inverse: {a, b} ⊂ Z

      → The inverse of 10a is -10a. Proof:

      10a + b = 0
      10a = -b
      b = -10a

      Every element's inverse is its negative counterpart

③