MATH310 Groupwork 2022-07-29

NAME:

1. Define the relation:
$$R = \{(x, y) \in \mathbb{R} \times \mathbb{R} \,\big|\, x = y^2\}$$
Give two reasons why R is not a function.
Solution:

2. Define the two functions:
$$f(x) = \frac{x^2 - 4}{x - 2} \text{ and } g(x) = x + 2$$
   (a) What are the domain and range of f?
   Solution:

   (b) What are the domain and range of g?
   Solution:

   (c) Are f and g equal? Explain.
   Solution:

3. Suppose $A, B \subseteq U$. Prove that:

$$\forall x \in U, \text{ if } \mathcal{X}_{A\cap B}(x) = 0 \text{ then } \mathcal{X}_A(x)\mathcal{X}_B(x) = 0.$$