

MATHEMATICS I-Part A

October, 10, 2019

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Classwork #3

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1) (1 point) Consider the functions $f(x) = \sqrt{1+x}$ and $g(x) = \frac{1}{x}$. Find the domains and images of f and g . Compute the equations of $f \circ g$ and of $g \circ f$. **Motivate your answers.**

2) (1 point) As in the previous point consider the functions $f(x) = \sqrt{1+x}$ and $g(x) = \frac{1}{x}$. Compute the domains and the images of $f \circ g$ and of $g \circ f$. **Motivate your answers.**

3) (1 point) Consider the set $A = \{1, 2\}$ and the set $B = \{1, 2, 3\}$. Is it possible to define a function

$$f : A \rightarrow B$$

which is both surjective and injective? **Motivate your answers.**