

Name: _____ Signature: _____ Student Number: _____

1. Let $A = \{0, 1\}$, $B = \{1, 2, 3, 4\}$, and $C = \mathbb{N}$. Consider the following functions:

$$f : A \rightarrow B$$

$$f(x) = x+3$$

$$g : B \rightarrow C$$

$$g(x) = 4x$$

$$h : C \rightarrow A$$

$$h(x) = \begin{cases} 0 & \text{if } x \text{ is even} \\ 1 & \text{if } x \text{ is odd} \end{cases}$$

Which of the following compositions are defined?

If they are defined, compute their domain, codomain, range and graph.

(a) $f \circ g$

ANSWER:

(b) $g \circ f$

ANSWER:

(c) $g \circ h$

ANSWER:

(d) $h \circ g$

ANSWER: