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Name: _____ Date : _____

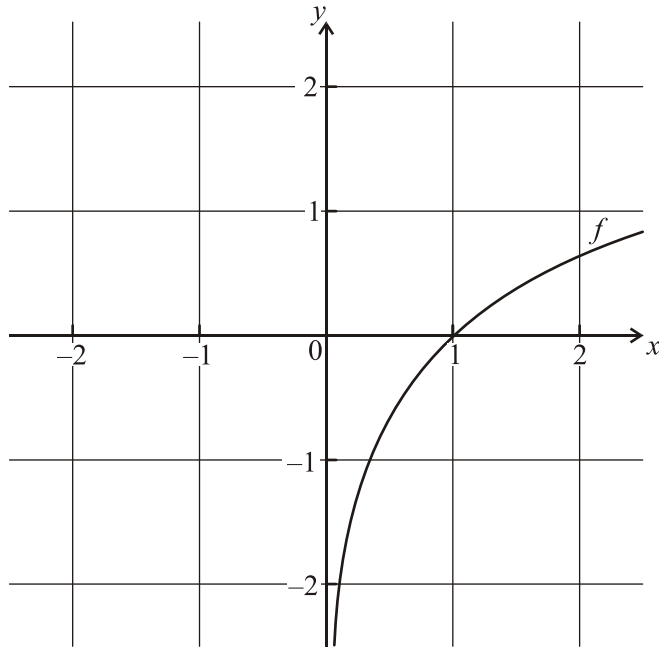
IBSL Year 1 Functions Quiz #1

Teacher: Ms. Aschenbrenner

Score: _____/32 IB: _____

1. Let $f(x) = \log_a x$, $x > 0$.

The diagram below shows part of the graph of f .



- (a) On the same diagram, sketch the graph of f^{-1} .

(3)

- (b) Write down the range of f^{-1} .

(1)

(Total 4 marks)

2. The function f is defined by

$$f : x \rightarrow \sqrt{3-2x}, \quad x \leq \frac{3}{2}$$

Evaluate $f^{-1}(5)$.

Working:

Answer:

(Total 4 marks)

3. Consider $f(x) = \sqrt{x-5}$.

(a) Find

(i) $f(11)$;

(ii) $f(86)$;

(iii) $f(5)$.

(3)

(b) Find the values of x for which f is undefined.

(2)

(c) Let $g(x) = x^2$. Find $(g \circ f)(x)$.

(2)

(Total 7 marks)

4. Let $f(x) = x^2$ and $g(x) = 2x - 3$.

(a) Find $g^{-1}(x)$.

(2)

(b) Find $(f \circ g)(4)$.

(3)

(Total 5 marks)

5. The functions f and g are defined by $f: x \mapsto 3x$, $g: x \mapsto x + 2$.

(a) Find an expression for $(f \circ g)(x)$.

(2)

(b) Find $f^{-1}(18) + g^{-1}(18)$.

(4)

(Total 6 marks)

6. Consider the functions $f(x) = 2x$ and $g(x) = \frac{1}{x-3}, x \neq 3$.

- (a) Calculate $(f \circ g)(4)$.
- (b) Find $g^{-1}(x)$.
- (c) Write down the domain of g^{-1} .

<i>Working:</i>	<i>Answers:</i> (a) (b) (c)
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(Total 6 marks)