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# PURE MATH

## ALGEBRA AND FUNCTION

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	FUNCTIONS
PAPER TYPE:	QUESTION PAPER - 1
TOTAL QUESTIONS	8
TOTAL MARKS	38

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**Questions****Q1.**

The function  $f$  is defined by

$$f(x) = x^2 + 2x + 1, x \in \mathbb{R}, x \geq -1$$

- (a) state the range of  $f$

(1)

- (b) Find an expression for  $f^{-1}(x)$  and state its domain

(4)

**(Total for question = 5 marks)**

**Q2.**

The function  $f$  is defined by

$$g(x) = 3x - 4, x \in \mathbb{R}, x \geq 2$$

- (a) state the range of  $f$

(2)

- (b) Find an expression for  $f^{-1}(x)$  and state its domain

(4)

**(Total for question = 6 marks)**

I am Sorry !!!!!

**Q3.**

The function  $f$  is defined by

$$h(x) = e^x, x \in \mathbb{R}$$

(a) state the range of  $f$

(3)

(b) Find an expression for  $f^{-1}(x)$  and state its domain

(3)

**(Total for question = 6 marks)**

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**Q4.**The function  $f$  is defined by

$$p(x) = x^2 - 4x + 3, x \in \mathbb{R}, x \leq 3$$

- (a) state the range of
- $f$

(2)

- (b) Find an expression for
- $f^{-1}(x)$
- and state its domain

(2)

**(Total for question = 4 marks)****Q5.**The function  $f$  is defined by

$$r(x) = \log_2(x + 4), x \in \mathbb{R}, x > -4$$

- (a) state the range of
- $f$

(2)

- (b) Find an expression for
- $f^{-1}(x)$
- and state its domain

(2)

**(Total for question = 4 marks)**

**Q6.**

The function  $f$  is defined by

$$t(x) = x^3 + 2x^2 - x - 3, x \in \mathbb{R},$$

- (a) state the range of  $f$  (2)
- (b) Find an expression for  $f^{-1}(x)$  and state its domain (2)

**(Total for question = 4 marks)**

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**Q7.**

The function  $f$  is defined by

$$v(x) = \log_3(|x| + 2), x \in \mathbb{R},$$

- (a) state the range of  $f$

(4)

(Total for question = 4 marks)

**Q8.**

The function  $f$  is defined by

$$g(x) = \frac{1}{x-1}, x \in \mathbb{R} x \neq 1$$

- (a) state the range of  $f$

(2)

- (b) Find an expression for  $f^{-1}(x)$  and state its domain

(3)

(Total for question = 5 marks)

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