IGCSE Edexcel Past Papers

FURTHER PURE MATHEMATICS

Paper 1

2015 — Winter 2019

1 - (4PM0-W 2015-Paper 1-Q6) - *INDICES*

(a) Solve, giving your answer to 3 significant figures,

$$3^z - 4 = 0$$

(3)

Solve, giving your answers to 3 significant figures where appropriate,

(b) $9^y - 13(3^y) + 36 = 0$

(4)

(c) $6^x - 4(2^x) - 3^x + 4 = 0$

(5)

2 - (4PM0-S 2017-Paper 1-Q1) **-** *INDICES*

Find the exact solution of the equation

$$\frac{16}{e^x} - e^x = 6$$

(5)

ANSWERS

1 - (4PM0-W 2015-Paper 1-Q6) - *INDICES*

(a)	$\log 3^z = \log 4$ $z = \dfrac{\log 4}{\log 3} = 1.26$
(b)	$(3^y)^2 - 13(3^y) + 36 = 0$ $(3^y - 4)(3^y - 9) = 0$ $3^y = 4 \quad \text{or} \quad 3^y = 9$ $y = 1.26 \quad \text{or} \quad y = 2$
(c)	$3^x 2^x - 3^x - 4(2^x) + 4 = 0$ $(3^x - 4)(2^x - 1) = 0$ $3^x = 4 \quad \text{or} \quad 2^x = 1$ $x = 1.26 \quad \text{or} \quad x = 0$

2 - (4PM0-S 2017-Paper 1-Q1) - *INDICES*

	$16 - \left(e^x\right)^2 = 6e^x$	M1
	$\left(e^x\right)^2 + 6e^x - 16 = 0$	A1
	$\left(e^x + 8\right)\left(e^x - 2\right) = 0$	M1
	$\left(e^x = -8 \quad \text{(not poss)}\right)$	
	$e^x = 2 \quad x = \ln 2$	M1A1
		[5]