

Edexcel As AND A Level modular mathematics -2, c2

A complete study notes of

chapter 3

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Exponential and logarithms

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Problem 5 → Rewrite using a power

(a) $\log_2 16 = 4$ (b) $\log_5 0.2 = -1$

Solution : (a) $\log_2 16 = 4$
 $\boxed{2^4 = 16}$ Ans [$\because \log_a n = x \rightarrow a^x = n$]

(b) $\log_5 0.2 = -1$
 $\boxed{5^{-1} = \frac{1}{5} = 0.2}$ Ans

Problem 6 → Find the value of $\log_{10} \sqrt{10}$

Solution → let $\log_{10} \sqrt{10} = x$

using $\log_a n = x \Rightarrow a^x = n$, we get

$10^x = \sqrt{10}$
Taking log on both sides

$$\log(10^x) = \log(\sqrt{10})$$

$$x \log 10 = \log \sqrt{10} \quad [\because \log a^x = x]$$

$$x \times 1 = \log \sqrt{10} \quad [\because \log 10 = 1]$$

$$x = \log \sqrt{10}$$

$$\boxed{x = \frac{1}{2}} \text{ Ans}$$

(6)