

ADVANCED '87

THEORY OF LOGARITHMS

Lobe 5
(10 Marks)

(i) Find the value of m if $25\sqrt{5} = 5^m$

$m = 2\frac{1}{2}$

(ii) Evaluate $\log_3 243$

5

(iii) Find x if $\log_4 x = 3$

64

(iv) If $\log_2 m = 1.44$ evaluate the following

(a) $\log_2 \sqrt{m}$

0.72

(b) $\log_2 2m$

2.44

(v) If $\log x = \log y - 2 \log z$ then which of the following statements is correct?

- (A) $x = y - 2z$ (B) $x = y - z^2$
(C) $x = \frac{y}{2z}$ (D) $x = \frac{y}{z^2}$

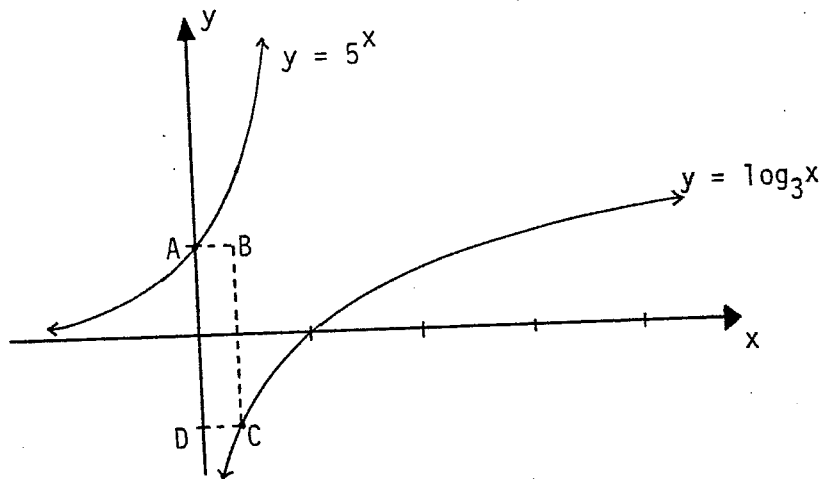
ANSWER: _____

D

(vi) If $4^t = 100$ find t correct to 2 decimal places.

3.32

(vii)



ABCD is a rectangle.
The coordinates of D are (0,-1).

(a) Find the co-ordinates of C.

$(\frac{1}{3}, -1)$

(b) Find the area of rectangle ABCD.

$\frac{2}{3} \ln 5$

L5 Marker's
Use Only