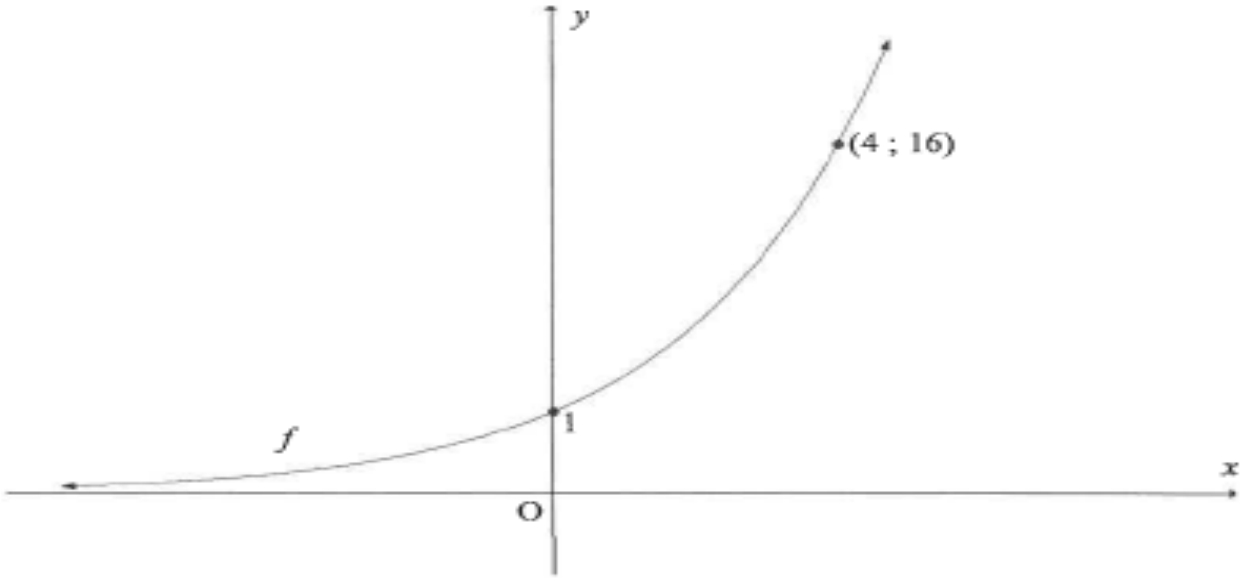
GRADE 12 FUNCTIONS PART 4

LOG AND EXPONENTIAL FUNCTIONS ANSWER TO PAST PAPER QUESTION

PAST PAPER QUESTION

QUESTION 5

Sketched below is the graph of $f(x) = k^x$; $k > 0$. The point $(4 ; 16)$ lies on f.



5.1 Determine the value of k. (2)

5.2 Graph g is obtained by reflecting graph f about the line $y = x$. Determine the equation of g in the form $y = \ldots$ (2)

5.3 Sketch the graph g. Indicate on your graph the coordinates of two points on g. (4)

ANSWERS

5.1

f(x)= k^x

$y = k^x$

SUB (4;16) into the equation to obtain k

$16 = k^4$

$\sqrt[4]{16} = k$

$2 = k$

5.2

SAME AS ASKING FOR INVERSE.

f(x)= 2^x is the function

We can say y= 2^x

x BECOMES to y AND y BECOMES x

$x = 2^y$

TO GET y THE SUBJECT OF THE FORMULA WE USE LOG FUNCTION

$y = \log_2 x$

5.3