Non-foundation Topics

Name : ( )

Class : Date :

Marks / Grade :

Worksheet 10D

1. Evaluate the following expressions. (Give your answers correct to 3 significant figures if necessary.)

   (a) $3.1^0 =$ _____

   (b) $1.5^{1.6} =$ _____

   (c) $4.25^{0.4} =$ _____

   (d) $2.8^{-2.5} \times 1.4^{0.7} =$ _____

2. Given that $f(x) = 0.75^x$, find the values of the following. (Give your answers correct to 3 significant figures if necessary.)

   (a) $f(0) = 0.75^{(\quad)} =$ _____

   (b) $f(1.2) = 0.75^{(\quad)} =$ _____

   (c) $f(-1.2) =$ _____ $=$ _____

   (d) $f(2.5) =$ _____ $=$ _____

3. Given that $f(x) = 3.5(1.8)^x$, find the values of the following. (Give your answers correct to 3 significant figures if necessary.)

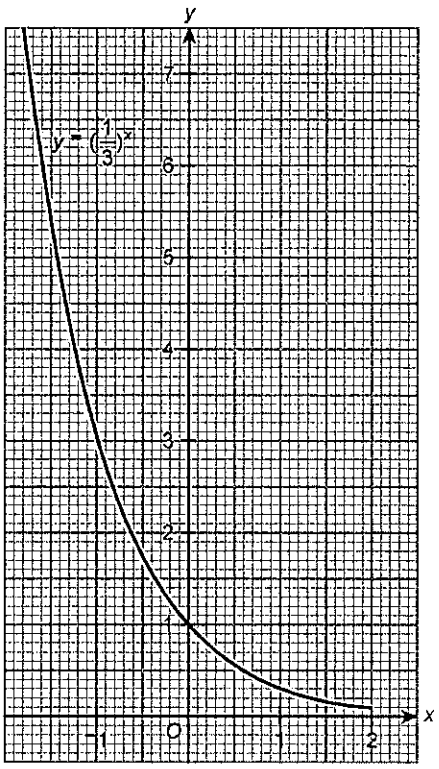
   (a) $f(0) =$

   (b) $f(0.8) =$

   (c) $f(2.1) =$

   (d) $f(-1.4) =$

4. The following is the graph of $y = (\frac{1}{3})^x$.



(a) According to the graph, find the approximate values of the following expressions. (Give your answers correct to 1 decimal place.)

(i) $(\frac{1}{3})^{0.5} =$ _____

(ii) $(\frac{1}{3})^{\frac{11}{10}} = (\frac{1}{3})^{(\quad)} =$ _____

(iii) $3^{0.5} = (\frac{1}{3})^{(\quad)} =$ _____

(iv) $\sqrt[10]{3} =$ _____ = _____

(b) According to the graph and each of the following values of y, find the value of the index x. (Give your answers correct to 1 decimal place.)

(i) When $y = 4$, $x =$ _____.

(ii) When $y = 0.8$, $x =$ _____.

5. The number of bacteria $N(t)$ in a container after starting the experiment for t minutes is given by $N(t) = 50(2)^{0.8t}$.

(a) Find the original number of bacteria in the container.

Solution

Original number of bacteria in the container = $N(0)$

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(b) Find the number of bacteria in the container after starting the experiment for 2 hours. (Give your answer correct to the nearest integer.)

Solution

Number of bacteria in the container after starting the experiment for 2 hours.

$= N(\quad)$

=

End