

EASTERN UNIVERSITY, SRI LANKA

FIRST YEAR FIRST SEMESTER EXAMINATION IN AGRICULTURE- 2004/05

AEN 1103 - BASIC MATHEMATICS (1:15/00)

Answer All Questions

Time: 01 hour

1.

a) Let $f(x)$ be a linear function for which $f(0) = 15$ and $f(3) = 3$. Find the function; $f(x)$

b) Show that if the points (a,b) , (a',b') , $(a-a', b-b')$ are collinear, their join passes through the origin and $ab' = a'b$.

c) Equation of a circle is $x^2 + y^2 - 3x - 3y + 2 = 0$.

- i. Find the centre of this circle
- ii. Find the radius of this circle
- iii. Show that $x + 3y = 1$ is a tangent to this circle

2.

a) Evaluate the following limits;

i. $\lim_{x \rightarrow 4} \frac{x^2 - 4x}{x - 4}$

ii. $\lim_{x \rightarrow 2} \frac{x^2 - 4}{x - 2}$

b) Compute $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ for the following cases.

i. $f(x) = x^3 - 2x$

ii. $f(x) = 1 - 1/x$