

Measure of Rectangle:

The area of an open rectangle

$$R (a < x < b, c < y < d)$$

i.e. $(b-a)(d-c)$ is defined as the measure of R

Thus $m(R) = (b-a)(d-c)$

The area of rectangle $R (a \leq x \leq b, c \leq y \leq d)$

i.e. $(b-a)(d-c)$ is defined as the measure of R

Thus $m(R) = (b-a)(d-c)$

Measurable Function: An extended real valued function f , defined over a measurable set E is said to be measurable if the set

$$\{x \in E : f(x) > a\}$$

is measurable for every extended real number a

The set $\{x \in E : f(x) > a\}$ is denoted by the

Symbol $E(f > a)$

Equivalent functions: - The functions f and g defined on the same set E , are said to be equivalent if

$$m[E(f \neq g)] = 0$$

functions f and g defined on the same set E are said to be

equivalent if $\exists A, B \subset E$

st $E = A \cup B, f = g \text{ on } A$

$$f \neq g \text{ on } B,$$

$$m(B) = 0$$