

FUNCTION OF A COMPLEX VARIABLE

A complex variable is an ordered pair of real variables i.e.

$$z = (x, y) = x + iy$$

Let $z = x + iy$ and $w = u + iv$ be two complex variables. If to every value of z in a certain domain D , there corresponds one or more values of w in a well defined way, then w is said to be the function of complex variables z on the domain D and is written as

$$w = f(z)$$

As u and v are both functions of x and y , this definition implies that a function of a complex variable z is exactly the same thing as a complex function

$u(x, y) + iv(x, y)$ or two real variables x and y

If to each value of z , there corresponds only one value of w , then the function $w(z)$ is called the single valued function of z . If the function $w(z)$ takes more than one value

corresponding to a value of z , then $w(z)$ is said to be a multi valued function of z .

2016	FEB					2016	FEB				
Mon	31	3	10	17	24	Mon	7	14	21	28	
Tue	4	11	18	25		Tue	8	15	22	29	
Wed	5	12	19	26		Wed	9	16	23	30	
Thu	6	13	20	27		Thu	10	17	24		
Fri	7	14	21	28		Fri	11	18	25		
Sat	8	15	22	29		Sat	12	19	26		
Sun	9	16	23	30		Sun	13	20	27		

Let us assume that the Term function signifies a single valued function unless the contrary is clearly indicated. Most of our work with multi-valued functions, such as $z^{1/2}$, can be carried out conveniently by dealing with single valued functions, each of which takes on just one of the multiple values for each value of z in a specified domain.

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