1016-420-02
Complex Variables

In-Class Exercise

2012 November 29

NAME:

1. Fill in the following table of values of $\mathrm{Arg}(x+iy) = \texttt{atan2}(y,x)$, defined to lie in the interval $(-\pi, \pi]$. (The ☹ indicates that the quantity cannot be defined.)

$\mathrm{Arg}(x+iy)$		x				
		$-\sqrt{3}$	-1	0	1	$\sqrt{3}$
y	$\sqrt{3}$					
	1					
	0			☹		
	-1					
	$-\sqrt{3}$					

2. Fill in the following table of values of y/x (use a ☹ to indicate that the quantity cannot be defined).

y/x		x				
		$-\sqrt{3}$	-1	0	1	$\sqrt{3}$
y	$\sqrt{3}$					
	1					
	0					
	-1					
	$-\sqrt{3}$					

3. Fill in the following table of values of the principal arctangent of y/x, defined to lie in the interval $(-\pi/2, \pi/2)$ (use a ☹ to indicate that the quantity cannot be defined).

$\text{Arctan}(y/x)$		x				
		$-\sqrt{3}$	-1	0	1	$\sqrt{3}$
y	$\sqrt{3}$					
	1					
	0					
	-1					
	$-\sqrt{3}$					