

## Quiz #1

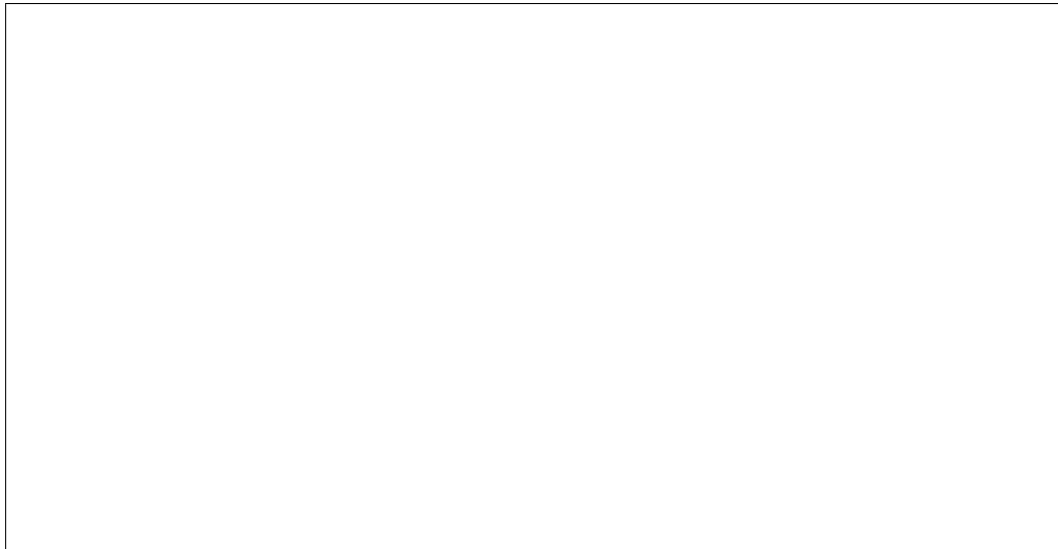
Monday, September 19 2016

**NAME:** \_\_\_\_\_

**Please write clearly and properly.**

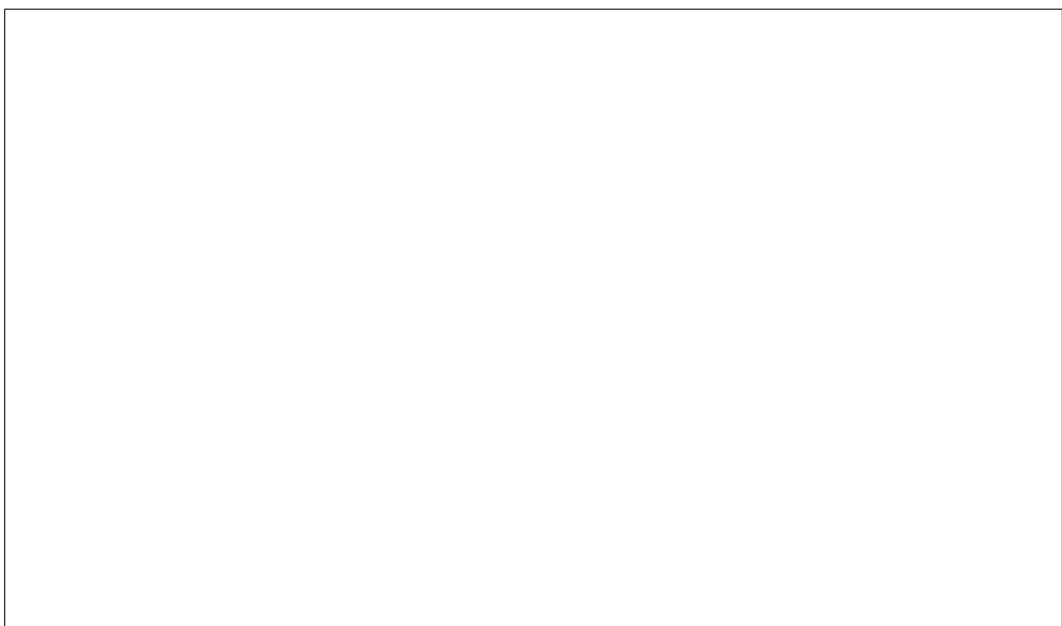
<b>Problem</b>	<b>Grade</b>
<b>1</b>	
<b>2</b>	
<b>Total</b>	

**Problem 1** (~ 2 points.). Recall Euler's and de Moivre's formulas for complex numbers.



**Problem 2** (~ 6 points.). Consider the complex numbers  $z = -1 - i$  and  $w = 2 - 2i$ .

(1) Show  $z$  and  $w$  in the complex plane (draw a quick sketch).



- (2) Compute the complex numbers  $\frac{1}{z}$ ,  $zw$  and  $w^4$ .

- (3) Find the polar form of  $z$  and  $w$ .

- (4) Recover the results you found in (2) using the polar forms of  $z$  and  $w$ .

- (5) Check that  $w = -2\bar{z}$ . Use this to compute  $zw$  in a different way yet again.