

Worksheet  
2/19/2020

Name: \_\_\_\_\_

1. Show that the operator  $(z, w) = z\bar{w}$  is an inner product on  $\mathbb{C}$ .

*See Lecture 18*

2. Show that the operator  $(z, w) = zw$  is not an inner product on  $\mathbb{C}$ .

See Lecture 18

3. Let  $V$  be a real inner product space. Let  $u$  and  $v$  be vectors in  $V$  that have the same norm. Show that  $u + v$  is perpendicular to  $u - v$ .

See Lecture 18