

1. Consider the equation $x^2 = -1$. Is there a real solution to this equation? Why or why not?

2. If $i^2 = -1$, what is the value of i ?

3. Calculate each power of i . Show your thinking.

Powers of i			
$i =$	$i^2 =$	$i^3 =$	$i^4 =$
$i^5 =$	$i^6 =$	$i^7 =$	$i^8 =$
$i^9 =$	$i^{10} =$	$i^{11} =$	$i^{12} =$

4. What conjectures can you make about the powers of i (did you notice a pattern)?

5. Calculate:

i^{43}

i^{84}

i^{33}

i^{50}