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| |  | | --- | | Where have we seen imaginary numbers before? | |  | | |  | | --- | | Imaginary Numbers | |
| |  | | --- | | Simplifying Powers  of i’s | | |  | | --- | | The Patterns of Powers, Signs, 1’s, and i’s | |
| Imaginary Numbers  Until now you have been told you cannot take the square root of a negative number. Now, however, you can take the square root of a negative number, but it involves a new number called “i” which is called the imaginary number.  Simplify:  Ex. Ex. Ex. Ex. | | Where have we seen imaginary numbers before?  In Math 1, we learned the quadratic formula and the discriminant. The discriminant, b2 – 4ac, determines the number of solutions and the type of solutions we will have with a quadratic equation.  Number and type of Real solutions to a Quadratic Function:  **Two Real One Real No Real**  b2 – 4ac > 0 b2 – 4ac = 0 b2 – 4ac < 0 | |
| The Patterns of Powers, Signs, 1’s, and i’s  Look for the patterns below:          What patterns do you see? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | Simplifying Powers of i’s  To simplify i to any power, try to get the exponent to an even power by removing an i if the exponent is odd, and then reverse the “power to a power” rule by dividing by two. Simplify using the properties of algebra.  Ex. Ex.  Ex. Ex. | |