

## MATH 140A Review: proof by contradiction and the contrapositive

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1. Show that  $\sqrt{5} + \sqrt{7}$  is irrational.
2. Assume that  $x$  is an integer. If  $x^7 - 3x^5 + 88$  is odd, then  $x$  is odd.
3. Find the contrapositive of: Let  $a_n$  be a sequence of real numbers. If  $\sum_{n=0}^{\infty} a_n$  converges, then  $a_n \rightarrow 0$  as  $n \rightarrow \infty$ .