```
    1:
    2: #include "LFSR.hpp"
    3:
    4: #define BOOST_TEST_DYN_LINK
    5: #define BOOST_TEST_MODULE Main
    6: #include <boost/test/unit_test.hpp>
    7:
    8: BOOST_AUTO_TEST_CASE(fiveBitsTapAtTwo) {
    9:   //steps through the function 8 times and checks to see the return bit is 1
 or 0.
   10:   LFSR l("00111", 2);
   11:   BOOST_REQUIRE(l.step() == 1);
   12:   BOOST_REQUIRE(l.step() == 1);
   13:   BOOST_REQUIRE(l.step() == 0);
   14:   BOOST_REQUIRE(l.step() == 0);
   15:   BOOST_REQUIRE(l.step() == 0);
   16:   BOOST_REQUIRE(l.step() == 1);
   17:   BOOST_REQUIRE(l.step() == 1);
   18:   BOOST_REQUIRE(l.step() == 0);
   19:
   20:   //Doing the math, it turns out to 198
   21:   LFSR l2("00111", 2);
   22:   BOOST_REQUIRE(l2.generate(8) == 198);
   23:
   24: }
   25:
   26: BOOST_AUTO_TEST_CASE(Test1){
   27:          // I stepped 5 times by doing the xor to the 2nd tap.
   28:   LFSR l3("0110110", 2);
   29:   BOOST_REQUIRE(l3.step() == 1);
   30:   BOOST_REQUIRE(l3.step() == 0);
   31:   BOOST_REQUIRE(l3.step() == 1);
   32:   BOOST_REQUIRE(l3.step() == 1);
   33:   BOOST_REQUIRE(l3.step() == 1);
   34:
   35: }
   36: BOOST_AUTO_TEST_CASE(Test2){
   37:   //goes  through step 3 times and by doing it out by hand, the answer is 7
   38:   //It steps 3 times.
   39:   LFSR l4("0110001", 3);
   40:   BOOST_REQUIRE(l4.generate(4) == 7);
   41: }
   42:
   43:
```