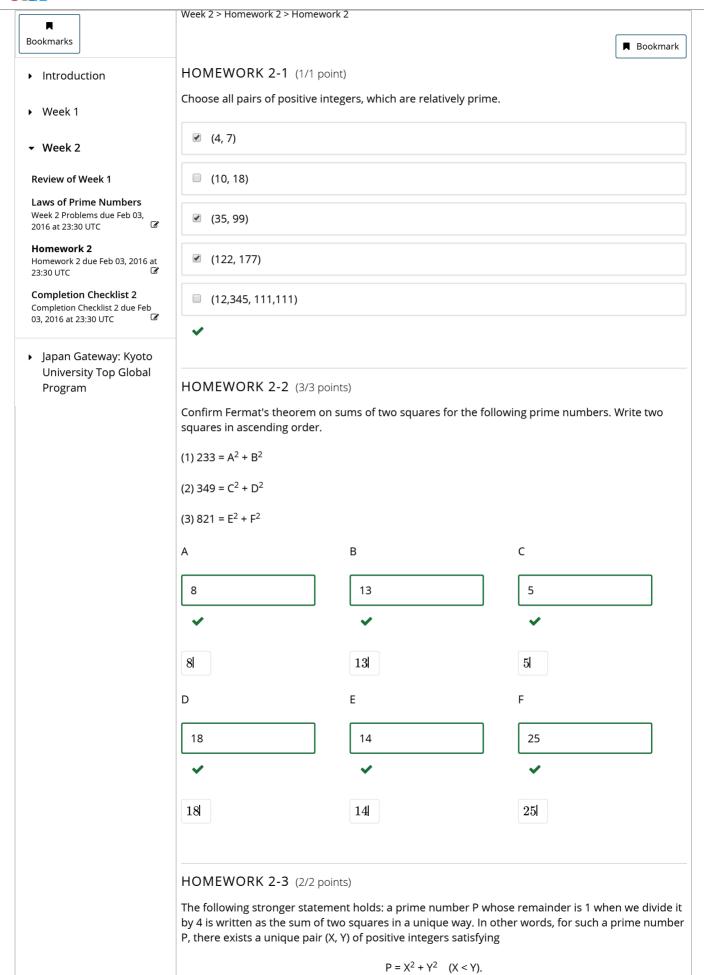


KyotoUx: 004x Fun with Prime Numbers: The Mysterious World of Mathematics



This statement is no longer true for composite numbers. For a concrete example, consider 221, which is a composite number. It is written as the sum of two squares in two different ways: $221 = A^2 + B^2 = C^2 + D^2$ (A < B, C < D, A < C) Find positive integers A,B,C,D satisfying the above condition. В C D Α 5 14 10 11 5 14 10 11 HOMEWORK 2-4 (4/4 points) Calculate integers modulo 11. Write the integers between 0 and 10 in the blanks. $(1) 2 - (4 + 5) \equiv A \pmod{11}$ $(2) 5 \times 9 \times 8 \equiv B \pmod{11}$ (3) $3^{123} \equiv C \pmod{11}$ (4) $10! \times 10! \times 10! \times 10! \times 10! \equiv D \pmod{11}$ (Hint: Use Wilson's theorem.) В C D Α 10 10

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