

ROMANIAN MATHEMATICAL MAGAZINE

Solve for natural numbers:

$$7^a - 7^b = 294$$

Proposed by Marin Chirciu-Romania

Solution by Tapas Das-India

$$7^a - 7^b = 294 \text{ or, } 7^b(7^{a-b} - 1) = 7^2 \times 6 = 7^2(7 - 1)$$

Comparing: $b = 2, a - b = 1$ then $a = 3$.