

$x^3 - 1,000 = x^3 - 10^3$ , and a binomial in the form  $a^3 - b^3$  can be factored as  $(a - b)(a^2 + ab + b^2)$ . The missing number is the value of  $b^2$ , so it cannot be negative. Whenever you factor, remember to check your answer by multiplying the factors back together.