

# MathFLIX CHALLENGE

## Multiplication by powers of 10

Multiplication by tens is easy once you learn a simple trick: add as many zeros to your number as there are zeros in the multiples of 10. For example,  $x \times 10 = x$  with 1 additional zero after it. Also,  $x \times 100 = x$  with 2 additional zeros after it, and so on.

Complete the problems below.

$1 \times 10 = 10$

$12 \times 10 =$

$2 \times 10 = 20$

$81 \times 10 =$

$3 \times 10 =$

$121 \times 10 =$

$5 \times 10 =$

$794 \times 10 =$

$10 \times 10 =$

$1,613 \times 10 =$

There is no limit to this trick. If you are multiplying by a number that begins with 1 and has only zeros after, finding the answer is as simple as counting the number of zeros. Complete the problems below.

$1 \times 100 = 100$

$1,243,512 \times 10 =$

$2 \times 10,000 =$

$1,612 \times 1,000 =$

$2 \times 1,000,000 = 2,000,000$

$200 \times 10,000 =$

$7 \times 10,000,000 =$

$4,001 \times 1,000,000 = 4,001,000,000$

$62 \times 10,000,000,000 =$

$333,333,333 \times 1,000,000 =$

It is usually a good idea to represent very large numbers using **exponents**. For example, 1,000,000 is represented as  $10^6$ . This means  $10 \times 10 \times 10 \times 10 \times 10 \times 10$ , or 10 multiplied by itself 6 times. And there are 6 zeros total in the number! Complete the table below.

$10^2 \times 5 = 500$

$10^3 \times 9 =$

$10^3 \times 3 = 3000$

$10^1 \times 11 =$

$10^2 \times 31 =$

$10^6 \times 12 =$

$10^4 \times 16 =$

$10^2 \times 8 =$

$10^4 \times 16 =$

$10^9 \times 10^1 =$