

# Arsh Arora's solution to the Live Problem - Standard Index Form Matching

Question - *How do you know that two cards match?*

Though this problem may seem tricky and strenuous at first, it's actually simpler than you think. There are 8 cards with simple multiplication questions that correspond to 8 other cards with answers to each of those 8 questions.

Let us look at one of the cards with a question,  $(1.6 \times 10^1) \times (3 \times 10^2)$ . To solve this, first ignore the power of 10. We multiply  $1.6 \times 3$ , by using the multiplication table of 16. So this becomes 4.8, and for the suffix, we just add the powers of 10 since it is a multiplication question. So  $10^1 \times 10^2$  becomes  $10^{1+2}$  which is  $10^3$ . And this answer patently corresponds to the card that reads " $4.8 \times 10^3$ ".

The approach is similar for division problems. One of the cards read  $\frac{(7.2 \times 10^1)}{(3 \times 10^3)}$  and for this we again ignore the suffix, and divide 7.2 by 3 to get 2.4.

For the suffix, in case of division, we subtract the power of the denominator from the power of the numerator, so  $10^{1-3}$  becomes  $10^{-2}$ . Combine the two to get your answer which corresponds to the card " $2.4 \times 10^{-2}$ ".

Using this intuitive method, you can efficiently solve this problem and any other problem like this with ease.