

Let's simplify the expression **$125^{(2/3)}$** step by step.

When you see something like a raised to a fraction, like $a^{(m/n)}$, it means:

1. Take the **n th root** of a . (That's the root in the denominator.)
2. Then raise the result to the **m th power**. (That's the numerator.)

So for **$125^{(2/3)}$** :

- The denominator is 3, so we find the **cube root** (third root) of 125.
- The numerator is 2, so we square (raise to power 2) the result.

Step 1: Find the cube root of 125.

Cube root of 125 means a number which when multiplied by itself 3 times equals 125.

Since $5 \times 5 \times 5 = 125$, the cube root of 125 is 5.

Step 2: Now, raise 5 to the power 2.

$$5^2 = 5 \times 5 = 25.$$

Therefore, $125^{(2/3)} = 25$.

Summary: $125^{(2/3)} = (\text{cube root of } 125)^2 = 5^2 = 25$.