√ SQUARE ROOTS

4^2 → EXPONENT → THE # OF TIMES THE BASE APPEARS IN THE MULTIPLICATION EXPRESSION

BASE → THE # BEING MULTIPLIED

SQUARE ROOT OF A NUMBER → A # THAT CAN BE MULTIPLIED BY ITSELF TO FIND ORIGINAL NUMBER.

$\sqrt{9}$ → "SQUARE ROOT of 9" → EQUALS 3

THE BASE

THE RADICAL

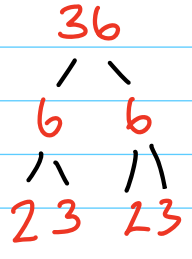
CAN WE FIND THE SQ. ROOT OF A NEG. NUMBER?

$\sqrt{-9}$ **No** to multiply to (-9) you have (-3)x(3) and those are 2 different (3)x(-3) NUMBERS.

EQUATION	EXPONENT	ANSWER	√ANSWER
1 x 1	1^2	1	1
4x4	4^2	16	4

PRIME FACTORIZATION FOR SQ. ROOTS (ALTERNATE METHOD)

- BREAKING A # INTO ITS PRIME FACTORS
- USE A FACTOR TREE

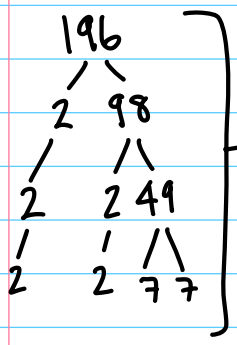


SINCE 2x2x3x3 = 36, WE CAN GROUP OUR PAIRS

(2x3)x(2x3) = 36

TAKE ONE FROM EACH PAIR & MULTIPLY

2 x 3 = 6 → THE SQUARE ROOT



→ SO... WE HAVE $(2\times2)(7\times7)$ → TAKE 1 FROM EACH PAIR & MULTIPLY

$2 \times 7 = 14$

$\sqrt{196} = 14$