Prime Factorizations

Prime number: Integer with 2 divisors:
1 and itself

7, 2, 3, 5

Composite: Integers that aren't prime

Is 87 prime? No $87 = 3 \cdot 29$

$< \sqrt{n}$ $> \sqrt{n}$

does not divide

$2 \nmid 87 \Rightarrow 4 \nmid 87$

$3 \mid 87$

↑ divides

$100 = 10 \cdot 10$

To check if n is prime:
check primes up to $\sqrt{n}$

Is 209 prime?

$\sqrt{209} = 14.4\ldots$

2, 3, 5, 7, 11, 13

$209 = 11 \cdot 19$ 209 is composite

Ex: Find the smallest composite # with no prime factors less than 10

~~2 3 5 7~~

11 13 17 . . —

$11 \cdot 13 = 143$

$11 \cdot 11 = 121$