

1.4 Prime Factorization

EQ: How can you tell when a number is divisible by another number?

Factor Pairs: two numbers that are multiplied together to make another number.

EX: $4 \times 4 = 16$

$8 \times 1 = 8$

$9 \times 10 = 90$

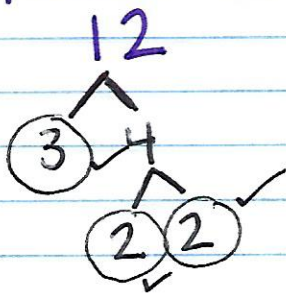
Prime: a number that can only be divided evenly by 1 and itself.

EX: $2 \begin{matrix} \wedge \\ 2 \ 1 \end{matrix}$ $3 \begin{matrix} \wedge \\ 3 \ 1 \end{matrix}$ $5 \begin{matrix} \wedge \\ 5 \ 1 \end{matrix}$

Composite: a number where more than two numbers can be divided in evenly

EX: $4 \rightarrow \begin{matrix} 1 \times 4 \\ 2 \times 2 \end{matrix}$, $12 \rightarrow \begin{matrix} 12 \times 1 \\ 6 \times 2 \\ 3 \times 4 \end{matrix}$

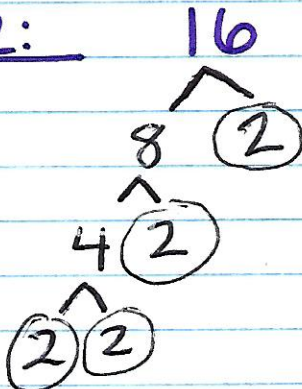
Example 1: Factor Tree/Prime Factorization



$= 3 \cdot 2 \cdot 2$

$= 3 \cdot 2^2$

Example 2:



$2 \cdot 2 \cdot 2 \cdot 2$

$= 2^4$