

Name: _____

Date: _____



Prime Factorization

Directions: Use a factor tree to find the prime factorization of each number provided. Be sure to write your final answer in exponential form.

1	<pre>graph TD; 12 --- 2; 12 --- 6; 6 --- 2; 6 --- 3; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 6 fill:#fff,stroke:#f00,stroke-width:2px; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 3 fill:#fff,stroke:#f00,stroke-width:2px;</pre>
	<p><u>Prime Factorization:</u></p> <p>$2 \cdot 2 \cdot 3 = 2^2 \cdot 3$</p>

2	<pre>graph TD; 38 --- 2; 38 --- 19; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 19 fill:#fff,stroke:#f00,stroke-width:2px;</pre>
	<p><u>Prime Factorization:</u></p> <p>$2 \cdot 19$</p>

3	<pre>graph TD; 50 --- 2; 50 --- 25; 25 --- 5; 25 --- 5; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 25 fill:#fff,stroke:#f00,stroke-width:2px; style 5 fill:#fff,stroke:#f00,stroke-width:2px; style 5 fill:#fff,stroke:#f00,stroke-width:2px;</pre>
	<p><u>Prime Factorization:</u></p> <p>$2 \cdot 5 \cdot 5 = 2 \cdot 5^2$</p>

4	<pre>graph TD; 80 --- 2; 80 --- 40; 40 --- 2; 40 --- 20; 20 --- 2; 20 --- 10; 10 --- 2; 10 --- 5; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 40 fill:#fff,stroke:#f00,stroke-width:2px; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 20 fill:#fff,stroke:#f00,stroke-width:2px; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 10 fill:#fff,stroke:#f00,stroke-width:2px; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 5 fill:#fff,stroke:#f00,stroke-width:2px;</pre>
	<p><u>Prime Factorization:</u></p> <p>$2 \cdot 2 \cdot 2 \cdot 2 \cdot 5 = 2^4 \cdot 5$</p>

5	<pre>graph TD; 200 --- 2; 200 --- 100; 100 --- 2; 100 --- 50; 50 --- 2; 50 --- 25; 25 --- 5; 25 --- 5; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 100 fill:#fff,stroke:#f00,stroke-width:2px; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 50 fill:#fff,stroke:#f00,stroke-width:2px; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 25 fill:#fff,stroke:#f00,stroke-width:2px; style 5 fill:#fff,stroke:#f00,stroke-width:2px; style 5 fill:#fff,stroke:#f00,stroke-width:2px;</pre>
	<p><u>Prime Factorization:</u></p> <p>$2 \cdot 2 \cdot 2 \cdot 5 \cdot 5 = 2^3 \cdot 5^2$</p>

6	<pre>graph TD; 150 --- 2; 150 --- 75; 75 --- 3; 75 --- 25; 25 --- 5; 25 --- 5; style 2 fill:#fff,stroke:#f00,stroke-width:2px; style 75 fill:#fff,stroke:#f00,stroke-width:2px; style 3 fill:#fff,stroke:#f00,stroke-width:2px; style 25 fill:#fff,stroke:#f00,stroke-width:2px; style 5 fill:#fff,stroke:#f00,stroke-width:2px; style 5 fill:#fff,stroke:#f00,stroke-width:2px;</pre>
	<p><u>Prime Factorization:</u></p> <p>$2 \cdot 3 \cdot 5 \cdot 5 = 2 \cdot 3 \cdot 5^2$</p>

***NOTE:** Factor trees may vary