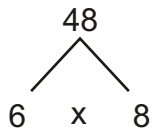
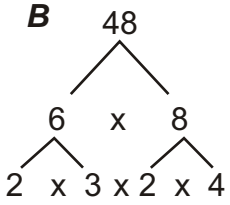
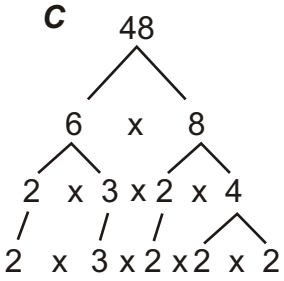
Name_____ Date_____

Factor Trees

Making a factor tree is the process of taking any prime number and "breaking it down" into all prime factors as the example illustrates below.

A  	**B**  	**C** 
6 and 8 are both composite so they must be broken down further.	The bottom row still has one composite number which has to be broken down which is the 4. Look at step C and note how the number four branches off into two prime numbers. The prime numbers from the previous row were dropped straight down using only a single line.	Express all of the numbers located in the bottom row un exponential form. Start with the smaller numbers to the largest. $2^4 \cdot 3$ Solve the expression to see if it equals the value you started with to check your answer!

Directions: Create a factor tree for each of the following numbers and express each answer in exponential form.

1) 45

$3^2 \cdot 5$

2) 32

2^5

3) 42

$2 \cdot 3 \cdot 7$

4) 150

$2 \cdot 3 \cdot 5^2$

5) 2,450

$2 \cdot 5^2 \cdot 7^2$

6) 800

$2^5 \cdot 5^2$

7) 48

$2^4 \cdot 3$

8) 60

$2^2 \cdot 3 \cdot 5$

9) 248

$2^3 \cdot 31$

10) 84

$2^2 \cdot 3 \cdot 7$

11) 88

$2^3 \cdot 11$

12) 72

$2^3 \cdot 3^2$

13) 128

2^7

14) 51

$3 \cdot 17$

15) 99

$3^2 \cdot 11$

16) 220

$2^2 \cdot 5 \cdot 11$

17) 32

2^5

18) 54

$2 \cdot 3^3$

19) 24

$2^3 \cdot 3$

20) 50

$2 \cdot 5^2$