4 – 3 Prime Factorization and Greatest Common Factor

prime number – is an integer greater than 1 with exactly two positive factors, 1 and itself.

Composite number – is an integer greater than 1 with more than two positive factors.

1 is neither prime nor composite

Example of prime #'s: 2, 3, 5, 7, 11 .....

Example of composite #'s: 4, 6, 8, 9, 10 .....

State whether each number is prime or composite and why?

23:

Prime because only 2 factors 1 and 23

129:

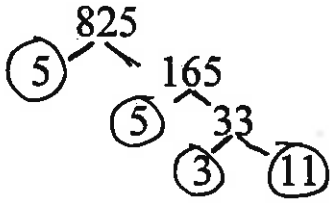
Composite more than 2 factors, 1 and 129, 3 and 43

Which number from 10 to 20 are prime and composite

Prime: 11, 13, 17, 19
Composite: 10, 12, 14, 15, 16, 18, 20

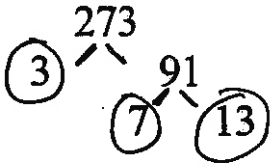
Prime factorization – writing a composite number as a product of the prime factors.

Use a factor tree to write the prime factorization of 825



Prime factors : 3, 5, 5, 11

So prime factorization : $3\ 5^2\ 11$



Prime Factorization: 3(7)(13)

Greatest Common Factor or GCF

You can use prime factorization to find the GCF of two or more numbers. If there are no prime factors in common the GCF is 1.

40 and 60

$6\ a^3\ b$ and $4a^2\ b$