

5.1 Prime Factorization

divisible
by 2

divisible by 2

The number is even
by 3

IF the sum of the digits
is divisible by 3

$$81 \rightarrow 8+1=9$$

$$1527 \rightarrow 1+5+2+7=15$$

then the number is divisible by 3

divisible by 5
if it Ends in 5, 0

divisible by 6
- divisible by 3
- even

681 (684)

divisible by 9

Sum of digits is divisible
by 9

$$\underline{1872} \underline{6345} \underline{2718} \underline{9}$$

sum is 63

then the number is divisible by 9

divisible by 10
ends in 0

362880

2, 3, 5, 6, 9, 10

What if we cant find
a number that goes
into it other than itself

- Prime
only 1, thenumber are factors
2 only even prime

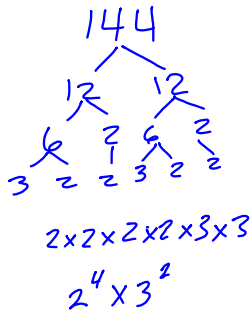
Composite
 more than 1 and itself
 as factors

51 }
 87 } divisible 3

Prime factorization
 the product of prime factors
 of a number



factor tree
 $2 \times 2 \times 2 \times 7$
 Product of powers
 $2^3 \times 7$



$7^3 \times 3^5$
 Prime factorization
 $7^3 \times 3^{10}$

$P232-233$
 3-60 by 3's