

Name: Key

4<sup>th</sup> Grade Notes 4.0B Divisibility Rules 3, 6, 9

A.) 3: a number is divisible by 3 if its digits add up to a number that is divisible by 3

Ex: 66  $\rightarrow$  6+6=12 & 12 is  $\div$  by 3, so 66 is too

Ex: 27  $\rightarrow$  2+7=9; divis. 3

Ex: 321  $\rightarrow$  3+2+1=6; divis. 3

Ex: 524  $\rightarrow$  5+2+4=11; not divis. 3

\*If you get an answer and you don't know if it's divisible by three, add the new digits until you get a number you know.

Ex: 59,484,769,998 = 78  $\rightarrow$   
7+8=15; divis. 3 (can even  
do 1+5=6)

B.) 9: a number is divisible by 9 if its digits add up to a number that is divisible by 9

Ex: 81  $\rightarrow$  8+1=9; divis. 9

Ex: 108  $\rightarrow$  1+0+8=9; divis. 9

Ex: 5,364  $\rightarrow$  5+3+6+4=18; divis. 9

\*If you get an answer and you don't know if it's divisible by nine, add the new digits until you get a number you know.

C.) 6: a number is divisible by 6 if it is divisible by both 2 and 3.

Ex: 822; divis. 2

$8+2+2=12$ ; divis. 3; 2 & 3 so also 6

Use divisibility rules to determine if each number is divisible by 2, 3, 5, 6, 9, and 10.

\*\*FIRST look at the number to decide if it's divisible by 2, 5, and 10. THEN add the digits to see if it's divisible by 3 and 9. (DO NOT add the digits for 2, 5, and 10.) Then if it's divisible by 2 and 3, it's also divisible by 6.

Ex: 9,180 (2; 5; 10)

$9+1+8+0=18$  (3; 9; also 6 because 2 & 3)  
→ answer: divis. 2; 5; 10; 3; 9; 6

Ex: 378 (2)

$3+7+8=18$  (3; 9; also 6 because 2 & 3)  
→ answer: divis. 2; 3; 9; 6