

## DIVISIBILITY RULES of Whole Numbers

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- 2:** All **EVEN** numbers (Any number that ends in: **0, 2, 4, 6, 8**).
- 3:** If the **Sum of the Digits** is divisible by 3, then the number is divisible by 3.  
Example:     **57:**  $5 + 7 = 12$                          **18:**  $1 + 8 = 9$                          **2,148:**  $2+1+4+8 = 15$   
                  **729:**  $7 + 2 + 9 = 18$                     **4211:**  $4 + 2 + 1 + 1 = 8$        **8,478:**  $8 + 4 + 7 + 8 = 27$
- 4:** If the **last two digits** in the number are divisible by 4, the number is divisible by 4.  
Example:     316:                    16 is divisible by 4:     Answer: 79  
                  702,012:            12 is divisible by 4     Answer: 175,503
- 5:** If the last digit is a: ZERO or FIVE (0 or 5).
- 6:** Any number that is divisible by "2" AND "3" is also divisible by 6.
- 7:** **MULTI STEP PROCESS!** (fun, but not practical to use!)  
Take the Last Digit in the number and multiply by (2).  
Subtract the "Doubled Number" from the original (Without last Digit)  
IF, the difference is divisible by 7 the number is divisible by 7.  
Example: **357:** Take the "7" and double it:  $\rightarrow 14$ .  
                  Subtract:  $35 - 14 = 21$   
  21 is divisible by 7  
Example: **5789:** Take the "9" and double it:  $\rightarrow 18$ .  
                  Subtract:  $578 - 18 = 560$ . CAN YOU TELL?  
  Yes: But 560 is divisible 80 times  
  IF NOT, repeat the steps with the new number.  
Example: **3872:** Take the "2" and double it:  $\rightarrow 4$ .  
                  Subtract:  $387 - 4 = 383$ . CAN YOU TELL?  
  IF NOT, repeat the steps with the new number.  
  383: Take the "3" and double it:  $\rightarrow 6$ .  
  Subtract:  $38 - 6 = 32$ . CAN YOU TELL?
- 8:** If the last 3 digits are divisible by 8, then the entire number is divisible by 8.
- 9:** If the **Sum of the Digits** is divisible by 9, the entire number is divisible by 9.  
If a number is divisible by "9" then it is also divisible by "3".
- 10:** If the **Last Digit = 0**.