GERMANNA
ACADEMIC CENTER
FOR EXCELLENCE

Divisibility Rules

	Rule	Example
Divisibility by 0	No numbers are divisible by 0.	None
Divisibility by 1	All numbers are divisible by 1.	All Numbers
Divisibility by 2	Even numbers are divisible by 2.	109850 is divisible by 2 because it is an even number.
Divisibility by 3	Add the digits of a number together. If the sum is divisible by 3, then the original number is divisible by 3.	The number 792 is divisible by 3 because $7 + 9 + 2 = 18$, and 18 is divisible by 3.
Divisibility by 4	If the last two digits of a number are divisible by 4, then the original number is divisible by 4.	The number 16248 is divisible by 4 because the last two digits, 48, are divisible by 4.
Divisibility by 5	If a number ends in 0 or 5, then the number is divisible by 5.	The number $563{,}021{,}689{,}540$ is divisible by 5 because it ends in 0.
Divisibility by 6	If a number is divisible by 2 and 3, then it is also divisible by 6.	The number 6874 is **not** divisible by 6, even though 6874 is even, indicating divisibility by 2, but $6 + 8 + 7 + 4 = 25$, and 25 is not divisible by 3.
Divisibility by 7	Double the last digit and then subtract it from the number formed by the remaining digits. If the result is divisible by 7 or equal to 0, then the original number is divisible by 7. This can be repeated if necessary.	The number 3416 is divisible by 7 because: Double the last digit Subtract from remaining digits $6 \times 2 = 12$ $341 - 12 = 329$ Repeat if necessary with the result. In this case 329 $9 \times 2 = 18$ $32 - 18 = 14$, and 14 is divisible by 7.

	Rule	Example
Divisibility by 8	If the last three digits of a number are divisible by 8, then the original number is divisible by 8.	The number 5128 is divisible by 8 because $128 \div 8 = 16$, and 16 is divisible by 8.
Divisibility by 9	Add the digits of a number together. If the sum is divisible by 9, then the original number is divisible by 9.	The number 65762 is **not** divisible by 9 because $6 + 5 + 7 + 6 + 2 = 26$, and 26 is not divisible by 9.
Divisibility by 10	If the number ends in 0, then it is divisible by 10.	The number 29581940 is divisible by 10 because the last digit is a 0.
Divisibility by 11	Alternately add and subtract the digits of the number. If the result is divisible by 11 or equal to 0 then the original number is divisible by 11.	The number 3564 is divisible by 11 because $3 - 5 + 6 - 4 = 0$.
Divisibility by 12	If a number is divisible by 3 and 4, then it is also divisible by 12.	The number 409536 is divisible by 12 because $4 + 0 + 9 + 5 + 3 + 6 = 27$ which shows divisibility by 3, and the last two digits, 36, indicate divisibility 4.

Source: Weisstein, Eric W. "Divisibility Tests." From *MathWorld*--A Wolfram Web Resource.
http://mathworld.wolfram.com/DivisibilityTests.html