

# DIVISIBILITY RULES

# DIVISIBILITY BY 2 :

👉 A number is divisible by 2 if its last digit is even (0, 2, 4, 6, 8).

✓ Example: 246 → last digit is 6 (even), so divisible by 2.

✗ Example: 157 → last digit is 7 (odd), not divisible by 2.

# DIVISIBILITY BY 3 :

👉 A number is divisible by 3 if the sum of its digits is divisible by 3.

✓ Example:  $132 \rightarrow 1 + 3 + 2 = 6$ , and  $6 \div 3 = 2$  (no remainder). ✓

✗ Example:  $245 \rightarrow 2 + 4 + 5 = 11$ , not divisible by 3. ✗

# DIVISIBILITY BY 4 :

👉 A number is divisible by 4 if the last two digits form a number divisible by 4.

✓ Example: 524 → last two digits = 24, and  $24 \div 4 = 6$  (no remainder). ✓

✗ Example: 137 → last two digits = 37, not divisible by 4. ✗

# DIVISIBILITY BY 5 :

👉 A number is divisible by 5 if its last digit is 0 or 5.

✓ Example: 325 → last digit is 5 ✓

✓ Example: 120 → last digit is 0 ✓

✗ Example: 247 → last digit is 7 ✗

# DIVISIBILITY BY 6 :

👉 A number is divisible by 6 if it is divisible by both 2 and 3.

✓ Example: 132 → last digit 2 (even, so divisible by 2). Digit sum = 6 (divisible by 3). ✓

✗ Example: 124 → divisible by 2 but digit sum = 7 (not divisible by 3). ✗

# DIVISIBILITY BY 7 :

👉 A number is divisible by 7 if:

Double the last digit, subtract from the remaining number.

If result is divisible by 7, then original number is divisible.

✓ Example:  $203 \rightarrow \text{last digit} = 3 \rightarrow \text{double} = 6 \rightarrow 20 - 6 = 14 \rightarrow 14 \div 7 = 2$  ✓

✗ Example:  $221 \rightarrow \text{last digit} = 1 \rightarrow \text{double} = 2 \rightarrow 22 - 2 = 20$  (not divisible by 7) ✗

# DIVISIBILITY BY 8 :

👉 A number is divisible by 8 if the last three digits form a number divisible by 8.

✓ Example: 8,216  $\rightarrow$  last three digits = 216  $\rightarrow 216 \div 8 = 27$  ✓

✗ Example: 5,432  $\rightarrow$  last three digits = 432  $\rightarrow 432 \div 8 = 54$  ✓

✗ Example: 6,521  $\rightarrow$  last three digits = 521 (not divisible by 8) ✗



# DIVISIBILITY BY 9 :

👉 A number is divisible by 9 if the sum of digits is divisible by 9.

✓ Example:  $729 \rightarrow 7 + 2 + 9 = 18 \rightarrow 18 \div 9 = 2$  ✓

✗ Example:  $245 \rightarrow 2 + 4 + 5 = 11$  (not divisible by 9) ✗

# DIVISIBILITY BY 10 :

👉 A number is divisible by 10 if its last digit is 0.

✓ Example: 670 → last digit is 0 ✓

✗ Example: 875 → last digit is 5 ✗

# DIVISIBILITY BY 11 :

👉 A number is divisible by 11 if the difference between the sum of digits at odd places and even places is divisible by 11.

✓ Example:  $1,463 \rightarrow (1 + 6) - (4 + 3) = 7 - 7 = 0$  (divisible by 11) ✓

✗ Example:  $2,354 \rightarrow (2 + 5) - (3 + 4) = 7 - 7 = 0$  ✓

✗ Example:  $3,752 \rightarrow (3 + 5) - (7 + 2) = 8 - 9 = -1$  (not divisible) ✗

# DIVISIBILITY BY 12 :

👉 A number is divisible by 12 if it is divisible by both 3 and 4.

✓ Example: 132  $\rightarrow$  digit sum = 6 (divisible by 3), last two digits = 32 (divisible by 4). ✓

✗ Example: 124  $\rightarrow$  digit sum = 7 (not divisible by 3). ✗

Divisible by	Rule
2	Last digit even (0,2,4,6,8)
3	Sum of digits divisible by 3
4	Last 2 digits divisible by 4
5	Last digit 0 or 5
6	Divisible by 2 and 3
7	Double last digit & subtract
8	Last 3 digits divisible by 8
9	Sum of digits divisible by 9
10	Last digit 0
11	(Sum of odd place digits – sum of even place digits) divisible by 11
12	Divisible by 3 and 4