

# COUNTDOWN CHALLENGE

## Tricks for Finding Multiples of 3 and 4

**TRICK 1:** Any number is divisible by 3 if the sum of the digits in the number is divisible by 3. Look at these examples:

$$21 \div 3 = 7 \quad \rightarrow \text{and } 2 + 1 = 3$$

$$102 \div 3 = 34 \quad \rightarrow \text{and } 1 + 0 + 2 = 3$$

$$918 \div 3 = 306 \quad \rightarrow \text{and } 9 + 1 + 8 = 18 \quad \rightarrow 18 \div 3 = 6$$

Use this trick to complete the table below

Number	Sum of digits	Divisible by 3	Number	Sum of digits	Divisible by 3
24	$2+4=6$	yes	217		
28	$2+8=10$	no	356		
39	$3+9=12$		413		
48			812		
57			6,131		
69			10,156		
116			12,031		

**TRICK 2:** Any number is divisible by 4 if the last two digits of the number are divisible by 4. Look at these examples:

$$120 \div 4 = 30 \quad \rightarrow \text{and } 20 \div 4 = 5$$

$$10,164 \div 4 = 2541 \quad \rightarrow \text{and } 64 \div 4 = 16$$

Use this trick to complete the table below

Number	Last 2 digits	Divisible by 4	Number	Last 2 digits	Divisible by 4
16	16	yes	2,216	16	no
28	28	no	4,340		
39			21,024		
48			23,658		
57			104,112		
69			2,084,880		
116			5,102,804		