

$$\begin{aligned} &\equiv 6 + 3 \\ &\equiv 9 \\ &\equiv 2 \pmod{7} \end{aligned}$$

$$\begin{aligned} &22 \times 52 \pmod{7} \\ &\equiv 6 \cdot 3 \\ &\equiv 18 \\ &\equiv 4 \pmod{7} \end{aligned}$$

5] Divisibility by: n

by 3 $5738 = 5 \times 10^3 + 7 \times 10^2 + 3 \times 10^1 + 8 \pmod{3}$
Add the digits

$$\equiv 5(1^3) + 7 \cdot 1^2 + 3 \cdot 1 + 8$$

$$\equiv 5 + 7 + 3 + 8$$

$$\equiv 23 \equiv 2+3 \equiv 5 \text{ keep adding the digits}$$

$$\equiv 2 \pmod{3}$$

by 9: $5738 = 5 \times 10^3 + 7 \times 10^2 + 3 \times 10^1 + 8 \pmod{9}$
Add the digits

$$\equiv 5(1^3) + 7 \cdot 1^2 + 3 \cdot 1 + 8$$

$$\equiv 5 + 7 + 3 + 8$$

$$\equiv 23 \equiv 2+3 \text{ keep adding the digits}$$

$$\equiv 5 \pmod{9}$$

by 5:

$$5738 = 5 \times 10^3 + 7 \times 10^2 + 3 \times 10^1 + 8$$

last digit

$$\equiv 5 \times 0 + 7 \times 0 + 3 \times 0 + 8$$

$$\equiv 0 + 0 + 0 + 8 \equiv 3 \pmod{5}$$

by 4:

$$5738 = 5 \times \cancel{10^3} + 7 \times \cancel{10^2} + 3 \times 10^1 + 8$$

last 2 digits

$$\equiv 0 + 0 + 38 \equiv 2 \pmod{4}$$

6] exer.

$$753 * 4235 \pmod{9}$$

$$\equiv 6 \cdot 5$$

$$\equiv 30$$

$$\equiv 3 + 0$$

$$\equiv 3 \pmod{9}$$

$$\underline{\underline{3188755}}$$

$$\equiv 3 \pmod{9}$$