

Divisibility and Number Properties

Chapter 5: Number Play · Topic 2

Key Concept

For divisibility by 11: find the difference between the sum of digits in odd positions and the sum of digits in even positions (counting from the right); if this difference is 0 or a multiple of 11, the original number is divisible by 11. For example, checking 2728: odd-position digits (8,7) sum to 15, even-position digits (2,2) sum to 4, difference is 11, so 2728 is divisible by 11 — a rule that, while more complex than others, saves considerable time compared to long division for larger numbers.

Quick Revision Notes

- Divisible by 4: last two digits form a number divisible by 4.
- Divisible by 9: digit sum is divisible by 9.
- Divisible by 11: alternating digit sum difference is 0 or a multiple of 11.
- These rules save time compared to performing full long division on large numbers.

Practice Questions

- 1 Check if 3168 is divisible by 4.
- 2 Use the divisibility rule for 11 to check if 2728 is divisible by 11.
- 3 Check if 4,536 is divisible by 9 using the digit-sum rule.