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CLASS 8 MATHS REVISION NOTES

Revision Notes: Class 8 Maths Chapter 5 Number Play

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Class 8 Maths Chapter 5: Number Play — Quick Revision Notes

Algebraic representation of remainders: a number leaving remainder r on division by d can be written as dn+r — this lets you prove claims about sums, differences and products without checking every case.

Always/Sometimes/Never true: a mathematical claim needs either a general algebraic proof (always true) or a counterexample (not always true) — checking one or two examples never proves a claim is always true.

Divisibility by 9: a number is divisible by 9 if and only if the sum of its digits is divisible by 9.

Divisibility by 11: a number is divisible by 11 if the difference between the sum of digits in odd positions and even positions is 0 or a multiple of 11.

Composite divisibility (18, 36, 44): break into coprime factors and test each separately — e.g. $18=2\times9$, $44=4\times11$, $36=4\times9$.

Digital root: keep summing a number's digits until one digit remains; it equals the remainder on division by 9 (except digital root 9, which means remainder 0), and is unchanged by reversing or rearranging the number's digits.

Products of consecutive integers: 2 consecutive integers → always divisible by 2; 3 consecutive → always by 6; 4 consecutive → always by 24; 5 consecutive → always by 120.

Cryptarithms: letter-for-digit puzzles solved using place value and careful case elimination — each letter is a unique digit, and the leading digit of a number can never be 0.

Set relationships: multiples of a larger number are always a subset of multiples of its factors — e.g. multiples of 32 ⊂ multiples of 8 ⊂ multiples of 4.

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