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CLASS 8 MATHS EXTRA QUESTIONS

Extra Questions: Class 8 Maths Chapter 5 Number Play

Practice questions beyond the textbook exercises, testing deeper understanding of divisibility rules and number puzzles for Class 8 Maths Chapter 5: Number Play.

Contents

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Extra Questions: Class 8 Maths Chapter 5 Number Play

1 (Assertion-Reason). Assertion: 4536 is divisible by 9. Reason: The sum of its digits is divisible by 9.
Solution: Both true, and the reason correctly explains the assertion — $4+5+3+6=18$, a multiple of 9.

2 (Numerical). Find the digit x if 92×5 is divisible by 11.
Solution: Alternating digit-sum (from the right): $5-x+2-9 = -x-2$. For divisibility by 11 this must be 0 or a multiple of 11, giving $x=9$ (since $-9-2=-11$). Check: $9295\div11=845$ exactly. **x=9**.

3 (Short Answer). Is the sum of any 4 consecutive integers always divisible by 4?
Solution: **No** — e.g. $1+2+3+4=10$, which is not divisible by 4. (The sum of n consecutive integers starting at a is always divisible by n only when n is odd.)

4 (Applied). Find the digital root of 123456789.
Solution: Digit sum = 45, digit sum of 45 = 9. Digital root = **9**.

5 (Assertion-Reason). Assertion: The product of any 3 consecutive integers is always divisible by 6. Reason: Among any 3 consecutive integers, at least one is divisible by 2 and one is divisible by 3.
Solution: Both true, and the reason correctly explains the assertion.

6 (Numerical). Find the smallest 4-digit number divisible by both 6 and 9.
Solution: LCM(6,9)=18; smallest 4-digit multiple of 18 is **1008** (18×56).

7 (Synthesis). If a number leaves remainder 4 when divided by 9, what is its digital root?
Solution: The digital root equals the remainder when divided by 9 (for non-multiples of 9), so the digital root is **4**.

8 (Applied). Solve the cryptarithm: $AB \times 3 = CAB$ (each letter is a distinct digit).
Solution: Writing AB as $10A+B$: $(10A+B)\times3 = 100C+10A+B \Rightarrow 20A+2B=100C \Rightarrow 10A+B=50C$. Since AB is a 2-digit number, C must be 1, giving AB=50. Check: $50\times3=150=CAB$ with **A=5, B=0, C=1**.

9 (Short Answer). Are all multiples of 4 also multiples of 8?
Solution: **No** — e.g. 4 and 12 are multiples of 4 but not of 8; every multiple of 8 is a multiple of 4, but not vice versa.

10 (Assertion-Reason). Assertion: Reversing the digits of a multiple of 3 always gives another multiple of 3. Reason: Digit sum is unchanged by reversing the order of digits.
Solution: Both true, and the reason correctly explains the assertion, since divisibility by 3 depends only on the digit sum.