

CLASS 9

MATHEMATICS

EXTRA QUESTIONS

Class 9 Mathematics Chapter 3 The World of Numbers – Extra Questions with Answers

Extra practice questions for Class 9 Maths Chapter 3 (The World of Numbers), beyond the textbook. These Class 9 Mathematics Chapter 3 important questions are handy for last-minute exam practice.

Contents

- Very Short Answer Questions (1 mark)
- Short Answer Questions (2–3 marks)
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Extra practice questions for Class 9 Maths Chapter 3 (The World of Numbers), beyond the textbook. These Class 9 Mathematics Chapter 3 important questions are handy for last-minute exam practice.

Very Short Answer Questions (1 mark)

Q1. Is $\sqrt{4}$ rational or irrational?

Ans: Rational, since $\sqrt{4} = 2 = 2/1$.

Q2. What type of decimal expansion does an irrational number have?

Ans: Non-terminating and non-repeating.

Q3. Simplify: $2^3 \times 2^2$.

Ans: $2^5 = 32$.

Q4. Is every integer a rational number?

Ans: Yes, since every integer n can be written as $n/1$.

Q5. Name the set that includes both rational and irrational numbers.

Ans: Real numbers.

Short Answer Questions (2–3 marks)

Q6. Classify the following as rational or irrational: 0.333..., $\sqrt{9}$, $\sqrt{7}$, $22/7$.

Ans: 0.333... is rational (repeating decimal, equals $1/3$). $\sqrt{9} = 3$ is rational. $\sqrt{7}$ is irrational (non-perfect square). $22/7$ is rational (a fraction of integers — note this is only an approximation of π , not π itself).

Q7. Rationalise the denominator of $1/\sqrt{2}$.

Ans: Multiply numerator and denominator by $\sqrt{2}$: $(1 \times \sqrt{2})/(\sqrt{2} \times \sqrt{2}) = \sqrt{2}/2$.

Q8. Describe, in words, how $\sqrt{2}$ can be represented accurately on the number line using a geometric construction.

Ans: Construct a right-angled triangle with both legs of length 1 unit on the number line; by the Pythagoras theorem, the hypotenuse has length $\sqrt{(1^2+1^2)} = \sqrt{2}$. Using a compass, this hypotenuse length can be transferred (swung as an arc) from the origin onto the number line, precisely marking the point $\sqrt{2}$.

Higher-Order Thinking / Application Questions

Q9. A student claims that the product of two irrational numbers is always irrational, citing $\sqrt{2} \times \sqrt{3} = \sqrt{6}$ as an example. Show, using a different example, that this claim is not always true.

Ans: The claim is false. Consider $\sqrt{2} \times \sqrt{2} = 2$, which is rational, even though both $\sqrt{2}$ factors are irrational. So the product of two irrational numbers can be either rational or irrational, depending on the specific numbers involved.

Q10. Simplify the expression $(3^2)^3 \div 3^4$ using laws of exponents, showing each step, and explain which law is applied at each step.

Ans: Step 1: $(3^2)^3 = 3^2 \times 3 = 3^6$ (using the law $(a^m)^n = a^{mn}$). Step 2: $3^6 \div 3^4 = 3^{6-4} = 3^2 = 9$ (using the law $a^m/a^n = a^{m-n}$).

Class 9 Mathematics Chapter 3 – Solutions and Notes

For complete step-by-step answers and a quick summary, check the [Class 9 Mathematics Chapter 3 Solutions](#) and [Class 9 Mathematics Chapter 3 Revision Notes](#).

See also: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#)

Practice more: [Chapter 1](#) | [Chapter 2](#)

Quick revision: [Chapter 1](#) | [Chapter 2](#)

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