

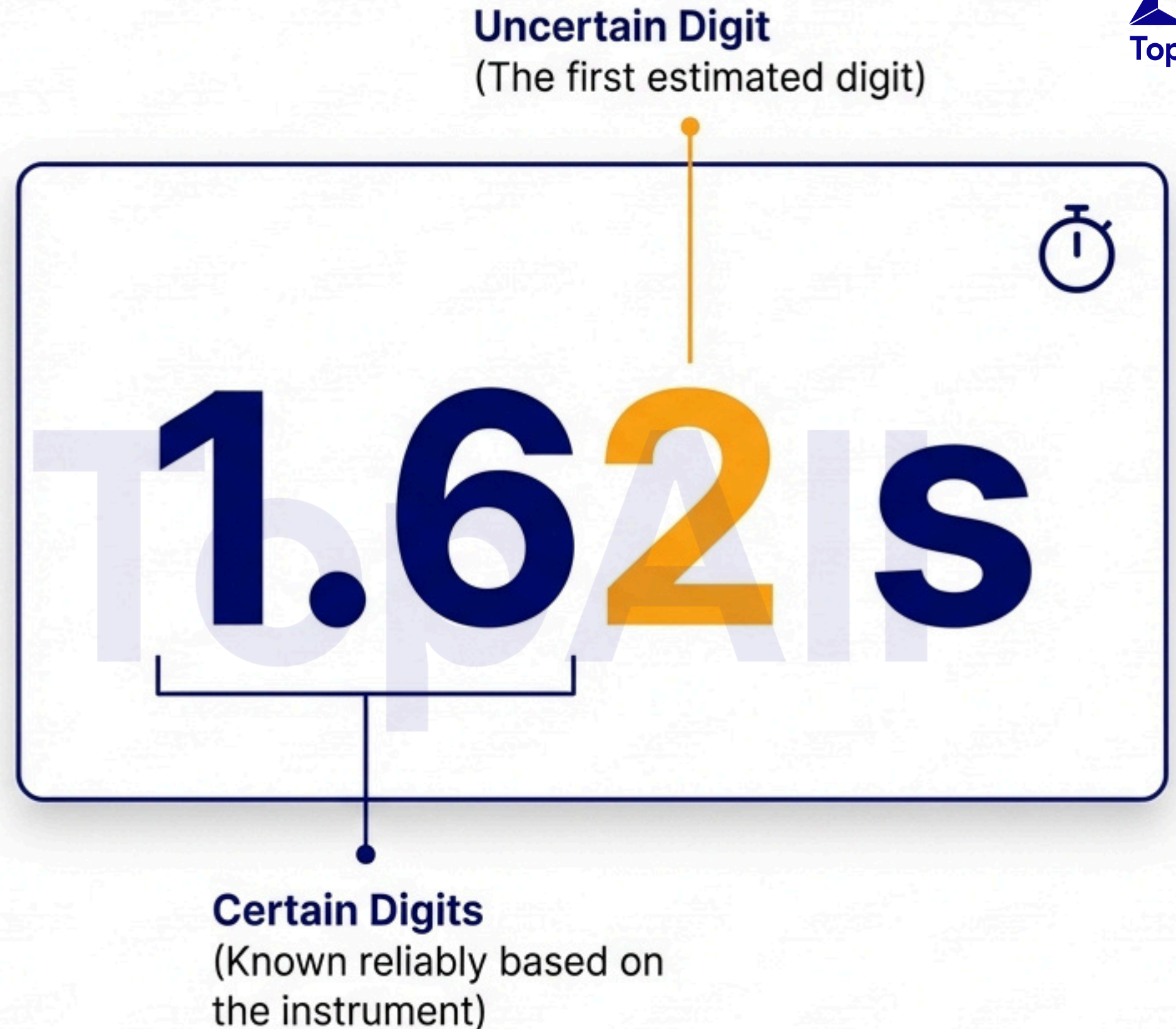
Significant Figures

The digits that reveal measurement precision



Every measurement has a limit.

When we measure a physical quantity, not all digits in the result carry the same level of confidence.



What are Significant Figures?

Significant figures include all the reliably known digits in a measurement, plus the first uncertain digit. They indicate the precision of the measuring instrument.

Period = 1.62 s

2 + 1 = 3
certain uncertain Significant
Figures

Length = 287.5 cm

3 + 1 = 4
certain uncertain Significant
Figures

The Rules of Identification

How to count significant figures based on the position of zeros.



4.700



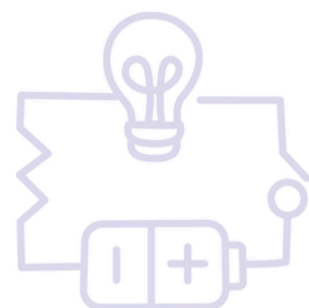
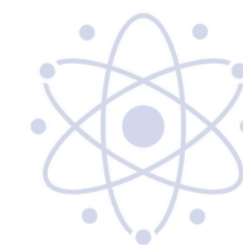
Trailing Zeros with a Decimal → Always significant (They indicate instrument precision).





You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

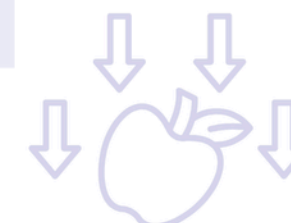
Practice Now



At prep.topall.app

Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter



Precision is tied to the instrument, not the unit.

A choice of different units does not change the number of significant figures.
The precision is permanently locked by the least count of the measuring tool used.



4.700 m



470.0 cm



4700 mm



0.004700 km

All of these represent the exact same physical measurement.

All contain exactly **4** significant figures.

Common Traps to Avoid

The No Decimal Trap

Measurement: 12300 cm

~~5 significant figures.~~

3 significant figures. Trailing zeros without a decimal point are not significant.

The Unit Conversion Trap

Scenario: 4.700 m converted to 4700 mm

~~Assuming 4700 mm now has 2 significant figures.~~

Still 4 significant figures. Use scientific notation (4.700×10^3 mm) to avoid trailing zero confusion.

Key Takeaways

- ✓ Include all reliably known digits plus exactly one uncertain digit when recording a measurement.
- ✓ Count all non-zero digits, trapped zeros, and trailing zeros (only if a decimal is present).
- ✓ Ignore leading zeros; they only serve to place the decimal point.
- ✓ Adopt scientific notation to entirely eliminate confusion regarding trailing zeros.

Check Your Understanding

Determine the number of significant figures in the following measurements:

$0.00\dot{7} \text{ m}^2 \rightarrow 1$
(leading zeros don't count)

$2.6\dot{4} \times 10^{24} \text{ kg} \rightarrow 3$
(powers of 10 are irrelevant)

$6.32\dot{0} \text{ J} \rightarrow 4$
(trailing zero with decimal counts)

$0.000603\dot{2} \text{ m}^2 \rightarrow 4$
(leading zeros ignored, trapped zero counts)

Next: Dimensions of Physical Quantities →



You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

That's exactly what TopAll Pro is built for.

Try TopAll Pro Now

What TopAll Pro Does Differently

-  **Stuck? Snap it. Solve it. — Doubts AI**
Photo → step-by-step solution in seconds, 24/7
-  **Your AI Coach finds your blind spots**
Concept-level weakness detection — not just chapter-level
-  **4.5 Lakh+ questions. Never run out.**
13× more content than any other prep app in India
-  **Build your own test in 60 seconds**
Pick a chapter, set difficulty — AI does the rest instantly.
-  **AI Recommendation that helps you improve**
AI Recommendation Analysis your Tests and tell you where you need to improve.



Practice the moment you finish studying
Jump in while the concept is still fresh in your head

4.5L+
MCQs

1.5L+
Students

AI Powered
In-Depth Analysis