QUICK REVIEW

Quick Review: Units and Measurements — Algebra-Based

Refresh the essential measurement, unit-conversion, dimensional, and precision ideas in just a few minutes.

TIME	BEST FOR	FINISH WITH
5–10 minutes	A rapid refresh	Key ideas refreshed

After this quick review, you'll be able to…

convert common units, use scientific notation, track significant figures, and check dimensional consistency.

HOW TO USE THIS GUIDE

Work through the four stages in order. Write directly in the spaces provided, check your work in the Quick Answers section, and finish by choosing the next resource that matches your confidence.

Choose how you want to review: work through this guide, follow the online review, or watch the video review.

Start the Review Online →
Watch the Video Review →

YOU WILL NEED

Pencil or pen • Calculator if needed • Approximately 5–10 minutes

FR-02 • COURSE ALIGNMENT

Course Alignment

This Physics Sensei Unit Review is an independent learning resource. Use it to reinforce key concepts, prepare for homework, or review before a quiz or exam.

RESOURCE: Physics Sensei Unit Review **UNIT ID: MEC-U01** **TOPIC: Units and Measurements** **COURSE LEVEL: Algebra-based introductory college physics**	**BEST USED** ✓ After learning the unit ✓ Before starting homework ✓ Before a quiz or exam

Start the Unit Review Online →

Physics Sensei organizes this material as an independent learning unit rather than following an external textbook chapter sequence.

FR-03 • YOUR REVIEW PLAN

Your Review Plan

Complete these four stages to quickly refresh the essential ideas and confirm you're ready to continue.

4 stages • Approximately 5–10 minutes

1 **Quick Recall — page 4** Refresh what you already know.	2 **Essential Idea — page 5** Review the most important concept.
3 **Confidence Check — page 6** Confirm you're ready to move on.	4 **Next Step — page 8** Continue your learning.

PRINTING TIP

For student copies, print double-sided and keep the Quick Answers section after the student activities so learners attempt each activity before checking their work.

FR-04 • STAGE 1 OF 4

Quick Recall

Let's quickly refresh what you already know. This short recall activity will bring the most important ideas back to mind before you review them.

QUICK RECALL

Recall Activity

Complete the three statements from memory before revealing the answer.

1) kilo means ____. 2) 72 km/h is about ____ m/s. 3) An equation is dimensionally consistent only if both sides have the same ____.

Ready to refresh the essentials?

Great! Now review the most important idea you'll want to remember.

Continue to Essential Idea — page 5 →

FR-05 • STAGE 2 OF 4

Essential Idea

Take one last look at the most important concept from this topic. If you remember this idea, the rest will come back much more easily.

ESSENTIAL IDEA

Convert with Factors, Check with Dimensions

Treat units as algebraic factors. Build conversion chains so unwanted units cancel, use scientific notation to manage powers of ten, and use dimensions to test whether an equation could be physically meaningful.

1 km = 10^3 m; 1 cm = 10^{-2} m; [v] = L T^{-1}; [a] = L T^{-2}; percent uncertainty = $(\Delta x/x) \times 100\%$.

EXAMPLE 72 km/h × (1000 m/1 km) × (1 h/3600 s) = 20 m/s.

SENSEI NOTE Do not memorize isolated conversion tricks. A correctly oriented conversion factor shows exactly why the units change.

Ready to check your memory?

You've refreshed the essential idea. Now see how much you remember before moving on.

Continue to Confidence Check — page 6 →

FR-06 • STAGE 3 OF 4

Confidence Check

You've refreshed the essential idea. Now answer this quick confidence check to confirm you're ready to move on.

CONFIDENCE CHECK

Five-Minute Readiness Check

Answer all three without notes.

Convert 3.50 × 10^3 mm to meters. State the dimensions of speed. Then identify the limiting significant figures in 2.4 x 3.15.

Ready for your next step?

Great work! You've refreshed the essential idea. Now choose the resource that best matches what you'd like to do next.

Continue to Next Step — page 8 →

QUICK ANSWERS • CHECK AFTER ATTEMPTING

Quick Answers and Explanations

Use these concise answers to check your recall and confidence—not only your final response.

QUICK RECALL

Recall Activity

1) 10^3; 2) 20; 3) dimensions.

WHY IT WORKS Prefixes, conversion factors, and dimensions provide a compact quantitative error-checking system.

CONFIDENCE CHECK

CONFIDENCE CHECK

Five-Minute Readiness Check

3.50 × 10^3 mm = 3.50 m. Speed has dimensions L/T. The product 2.4 x 3.15 should normally be reported with two significant figures.

WHY IT WORKS The metric prefix supplies the power of ten, dimensions describe quantity type, and multiplication is limited by the least precise factor.

READINESS GUIDE

3 correct: You're ready to continue. • 2 correct: Review the missed idea. • 0–1 correct: Revisit the Essential Idea or choose more practice.

FR-07 • STAGE 4 OF 4

Next Step: Continue Learning

Great work! You've completed this quick review. Choose the next resource that best matches how confident you feel.

?	◎	✓
I'm Still Unsure	**I Need More Practice**	**I'm Ready**
Review the essential idea again.	Continue with additional practice for this topic.	Continue to the next recommended resource.
Review again: return to Essential Idea on page 5.	Go to Practice →	Continue →

RECOMMENDED LINKS

Review again: return to Essential Idea on page 5.

Find additional practice →

Choose another type of physics help →

Continue reviewing with these companion resources.

Start the Review Online →
Watch the Video Review →

PHYSICS HELP THAT MAKES SENSE

A Physics Sensei review never ends at the last question. It always guides you toward the next useful step.

PhysicsSensei.com