MATHEMATICS · GRADES 7-9

Rates and unit conversions

Difficulty level: Intermediate

Mathematics: Grades 7-9

This document was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

Overview of the concept

This is how you change a speed from kilometres per hour to metres per second, a recipe from cups to millilitres, or a price from per pound to per kilogram. A driver crossing into the United States has to read miles per hour instead of kilometres per hour, and a cook following an American recipe has to turn cups into millilitres. A shopper comparing a price per pound with a price per kilogram needs the same conversion to know which is cheaper. Converting units is what lets you compare numbers that were measured in different ways.



© 2026 Brett Robbins. All Rights Reserved.

Rule

To convert a rate, convert each unit on its own: the top unit and the bottom unit.

Work out the conversion for each unit, then put the converted units back together as a rate.

Worked examples

EXAMPLE 1

Q Convert 72 km per hour to metres per minute

SOLUTION

Picture it

Convert 72 km per hour to metres per minute

Work it one step at a time, top to bottom.

Convert kilometres to metres: 72 km = 72,000 m.

Convert hours to minutes: 1 hour = 60 minutes.

So 72,000 m per 60 minutes = 1,200 m per minute

© 2026 Brett Robbins. All Rights Reserved.

EXAMPLE 2

Q Convert 5 m per second to metres per minute

SOLUTION

Picture it

Convert 5 m per second to metres per minute

Work it one step at a time, top to bottom.

Keep the distance unit the same: metres.

Convert seconds to minutes: 1 minute = 60 seconds.

So 5 × 60 = 300 m per minute

Practice questions

1 Convert 48 km per hour to metres per minute.

- **A** 480 m per minute
- **B** 800 m per minute
- **C** 2880 m per minute
- **D** 48000 m per minute

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

2 **Convert 7 m per second to metres per minute.**

A 4200 m per minute

B 42 m per minute

C 70 m per minute

D 420 m per minute

Understand It with Pulse | Flag a mistake

3 **Convert 900 m per minute to km per hour.**

Understand It with Pulse | Flag a mistake

4 **Convert 540 m per minute to m per second.**

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

5 Convert 72 km per hour to metres per second.

Understand It with Pulse | Flag a mistake

6 Which is faster, 60 km per hour or 20 m per second?

A 60 km per hour

B 20 m per second

C They are the same

D Cannot tell

Understand It with Pulse | Flag a mistake

7 Convert 25 m per second to km per hour.

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

8 Convert 240 minutes to hours.

Understand It with Pulse Flag a mistake

9 Convert 7 km to metres.

Understand It with Pulse Flag a mistake

10 A car travels 120 km in 2 hours. What is its speed in km per hour?

Understand It with Pulse Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

ANSWER KEY

1. 800 m per minute

2. 420 m per minute

3. 54

4. 9

5. 20

6. 20 m per second

7. 90

8. 4 hours

9. 7,000 m

10. 60

© 2026 Brett Robbins. All Rights Reserved.