MATHEMATICS · GRADES 10-12

Depreciation

Difficulty level: Advanced

Mathematics: Grades 10-12

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 a car or a phone loses value over time (see Percentage change). A new car drops in value the moment you drive it away, and the price you could sell it for drops a little more every year you own it. That is why a used car costs so much less than a new one, and why businesses plan for equipment wearing out. Knowing the rate of that drop tells you what something is really worth, not just what you paid for it.



© 2026 Brett Robbins. All Rights Reserved.

Worked examples

EXAMPLE 1

Q A machine costs 10000 dollars and depreciates by 1000 dollars per year. What is it worth after 3 years?

SOLUTION

Straight-line means it loses the same amount each year, so over 3 years it loses 1000 × 3 = 3000 dollars.

After 3 years, take that loss off the starting price: 10000 - 3000 = 7000

Value: 7000 dollars

EXAMPLE 2

Q A car costs 20000 dollars and loses 10 percent of its value each year. What is it worth after 1 year?

SOLUTION

Declining balance: after one year it keeps 100% - 10% = 90% of its value, so multiply by 0.90.

20000 × 0.90 = 18000

Value after 1 year: 18000 dollars

© 2026 Brett Robbins. All Rights Reserved.

Practice questions

1 An asset costs 30000 dollars, straight-line 3000 per year. What is its value after 2 years?

Understand It with Pulse | Flag a mistake

2 An asset costs 2000 dollars, straight-line 500 per year. What is its value after 4 years?

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

3 **What is straight-line depreciation?**

A Losing the same amount each year

B Losing the same percentage of the current value each year

C Gaining the same amount each year

D Losing value only in the first year

Understand It with Pulse | Flag a mistake

4 **An asset costs 10000 dollars, loses 20 percent per year. What is its value after 1 year?**

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

5 **An asset costs 5000 dollars, straight-line 500 per year. What is its value after 10 years?**

Understand It with Pulse | Flag a mistake

6 **What is declining-balance depreciation?**

A Losing the same amount each year

B Losing the same percentage of the current value each year

C Losing the same percentage of the original value each year

D Gaining value each year

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

7 An asset costs 40000 dollars, loses 10 percent per year. What is its value after 2 years?

Understand It with Pulse Flag a mistake

8 An asset costs 800 dollars, straight-line 100 per year. What is its value after 3 years?

Understand It with Pulse Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

9

What is book value?

A The original price of an asset

B The amount lost in one year

C The value of an asset after depreciation

D The rate at which an asset loses value

Understand It with Pulse | Flag a mistake

10

An asset costs 9000 dollars, straight-line 1000 per year. What is its value after 5 years?

Understand It with Pulse | Flag a mistake

© 2026 Brett Robbins. All Rights Reserved.

ANSWER KEY

1. 24000 dollars

2. 0 dollars

3. Losing the same amount each year

4. 8000 dollars

5. 0 dollars

6. Losing the same percentage of the current value each year

7. 32400 dollars

8. 500 dollars

9. The value of an asset after depreciation

10. 4000 dollars

© 2026 Brett Robbins. All Rights Reserved.