MATHEMATICS · GRADES 10-12

Investment returns

Difficulty level: Advanced

Mathematics: Grades 10-12

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Overview of the concept

This is how you compare investments fairly, by seeing how much each one gained compared with what you put in, like choosing between two savings accounts. A raw dollar gain means little on its own, because ten dollars on a hundred is very different from ten dollars on a thousand. Comparing returns properly is how you choose between savings accounts, judge whether an investment beat inflation, or decide if a business venture was actually worth the money you put in.



Rule

$$\text{Return} = \frac{\text{gain}}{\text{starting amount}}, \text{ where gain} = \text{final amount} - \text{starting amount}.$$

A positive return means the investment grew, and a negative return means it shrank.

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Worked examples

EXAMPLE 1

Q You invest $1000 and it grows to $1100. Find the return.



SOLUTION

Gain = $1100 - $1000 = $100

$$\text{Return} = \frac{\text{gain}}{\text{starting amount}} = \frac{100}{1000}$$

Return = 0.10, or 10 percent

EXAMPLE 2

Q You invest $500 and it grows to $600. Find the return.

SOLUTION

Gain = $600 – $500 = $100

$$\text{Return} = \frac{100}{500} = 0.20$$

Return = 20 percent

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Practice questions

1 Maya invests $200 and it grows to $220. What is the return?

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2 A stock bought for $400 falls to $360. What is the return?

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3 **Write the return formula using the final value and the starting value.**

A $\frac{\text{Final value}}{\text{starting value}}$

B $\frac{\text{(Final value - starting value)}}{\text{starting value}}$

C $\frac{\text{Starting value}}{\text{final value}}$

D $\frac{\text{(Final value + starting value)}}{\text{starting value}}$

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4 **A savings account starts at $1000 and grows to $1250 in a year. What is the return?**

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5 **A bike bought for $250 sells for $300. What is the return?**

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6 **A fund reports a return of -8 percent. What does that tell you?**

A The investment grew by 8 percent

B The investment lost money

C The investment stayed the same

D The investment doubled

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7 **A bond grows from $800 to $1000. What is the return?**

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8 **A pension grows from $2000 to $2100. What is the return?**

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9 **An account shows a 0 percent return for the year. What happened to its value?**

A The value doubled

B The value fell to zero

C The value did not change

D The value grew by 100 percent

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10 **A coin collection bought for $150 sells for $180. What is the return?**

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ANSWER KEY

1. 10 percent

2. -10 percent

3. $\frac{\text{(Final value - starting value)}}{\text{starting value}}$

4. 25 percent

5. 20 percent

6. The investment lost money

7. 25 percent

8. 5 percent

9. The value did not change

10. 20 percent

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