MATHEMATICS · GRADES 10-12

Inflation and purchasing power

Difficulty level: Advanced

Mathematics: Grades 10-12

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Overview of the concept

This is how you work out what your money will actually buy in the future, so a savings goal set today still makes sense when prices have risen. A dollar saved today will not buy the same groceries in ten years, and a savings target that ignores that is a target that will fall short. Knowing how purchasing power shrinks lets you set a realistic savings goal, judge whether a wage rise is a real rise, or work out what a pension will actually be worth when you retire.



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Worked examples

EXAMPLE 1

Q Prices rise 10 percent in a year. What does 110 dollars next year buy, compared with 100 dollars today?



Same basket: 100 dollars now, 110 next year.

SOLUTION

Something costing 100 dollars today costs 110 dollars next year.

So 110 dollars next year buys what 100 dollars buys today.

Purchasing power fell: you need 10 percent more money for the same goods.

EXAMPLE 2

Q Prices rise 5 percent. What is 105 dollars next year worth in today's dollars?

SOLUTION

Prices rose 5 percent, so 100 dollars today becomes 105 dollars next year. That is 1.05 times as much, so to work back to today's dollars, divide by 1.05:

Divide by 1.05: $\frac{105}{1.05}$

That is 100 dollars.

So 105 dollars next year is worth 100 dollars today.

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Practice questions

1 Prices rise 10 percent. What does 220 dollars next year buy, in today's dollars?

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2 An item costs $100 today. Prices rise 2%. What does it cost next year?

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3 What is inflation?

- A A general rise in prices over time
- B A general fall in prices over time
- C A rise in wages over time
- D A fall in interest rates over time

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4 If prices double, what happens to purchasing power?

- A It doubles
- B It halves
- C It stays the same
- D It disappears

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Prices rise 25%. Your wage also rises 25%. Has your purchasing power changed?

- A No
- B Yes, it has risen
- C Yes, it has fallen
- D Yes, it has doubled

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What is purchasing power?

- A What money can buy
- B How much money a bank holds
- C The price of gold
- D How fast prices rise

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7 **If inflation is 0 percent, does purchasing power change?**

A Yes

B No

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8 **Prices rise 10 percent per year for 2 years. What is 121 dollars worth today?**

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What happens to savings if inflation is higher than the interest rate?

A Their real value rises

B Their real value falls

C Their real value stays the same

D They grow faster

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Prices fall 10 percent. What is 90 dollars next year worth today?

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ANSWER KEY

1. 200 dollars

2. 102 dollars

3. A general rise in prices over time

4. It halves

5. No

6. What money can buy

7. No

8. 100 dollars

9. Their real value falls

10. 100 dollars

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