SAT MATH / DAILY CHALLENGE

Percentage change

2026-11-02 ▪ Question first, full lesson next

TODAY'S QUESTION

A quantity increases from 900 to 1260. What is the percentage increase?

A. 42

B. 41

C. 39

D. 40

Before you choose

Identify what the question asks for. Write the relationship you will use, show the substitutions, and check whether the answer represents a value, a coordinate or a coefficient. The complete solution and the supporting theory follow in this document.

Your reasoning

When you are ready, continue to the illustrated lesson. The worked answer to this exact challenge appears on the final page.

PROBLEM-SOLVING AND DATA ANALYSIS / 01 UNDERSTAND

Percentage change

An illustrated lesson ▪ Theory, reasoning and worked examples

Percent means per hundred

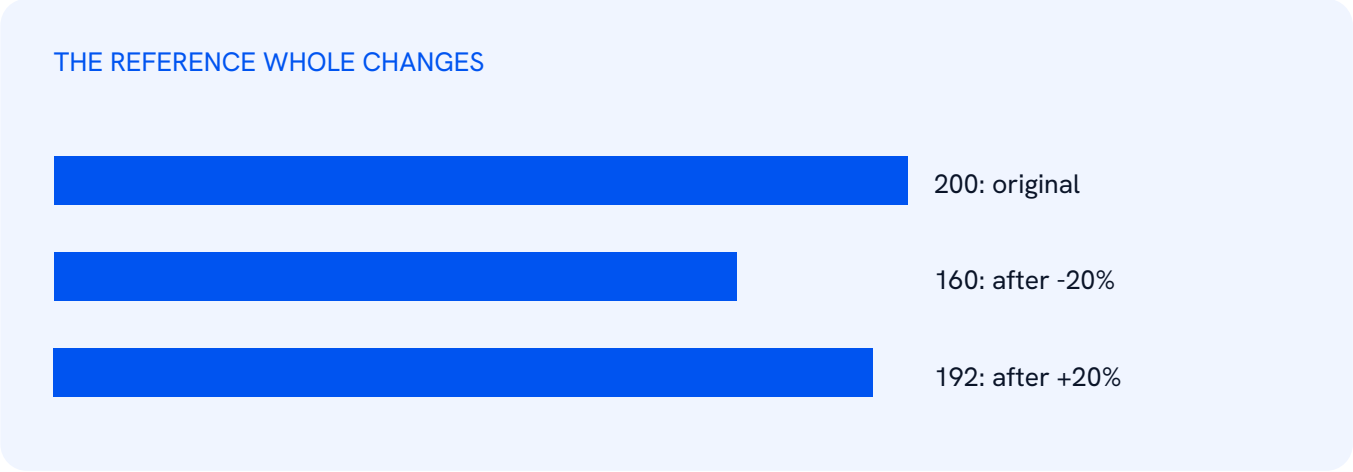
A percentage compares an amount with a reference whole. In 15% of 80, the whole is 80 and the rate is 15/100 = 0.15, so the part is 12. Identifying the reference whole is the most important reading step: the same difference can represent different percentages when measured against different starting values.

Change is measured from the original

Percentage change is (new - original)/original × 100%. A positive result represents an increase and a negative result a decrease. Going from 80 to 100 is a 25% increase because the change 20 is one quarter of 80. Going from 100 to 80 is a 20% decrease because the reference whole is now 100.

Percent and percentage points differ

If a success rate rises from 20% to 30%, it increases by 10 percentage points. Its relative percentage increase is 10/20 × 100% = 50%. The absolute difference between two rates and the relative change in a rate answer different questions. Read the units of the requested answer carefully.



Illustrative teaching diagram. Values and examples are explained in the lesson.

THE ESSENTIAL IDEA

A percentage change is measured relative to the original value.

PROBLEM-SOLVING AND DATA ANALYSIS / 02 BUILD THE METHOD

From idea to method

Use multipliers for a new amount

An increase of r% multiplies the original by 1 + r/100. A decrease multiplies it by 1 - r/100. This method combines the unchanged original and the change into one operation. For a 15% discount, the customer pays 85% of the original price, so the multiplier is 0.85.

Work backward by division

If a discounted price is 68 dollars after a 15% reduction, then 0.85P = 68 and P = 80. Adding 15% of 68 does not reverse the discount because that percentage uses the discounted value as its reference, not the original price.

Apply successive changes in order

For a 20% discount followed by 10% tax on the discounted price, multiply by 0.80 and then 1.10. The combined multiplier is 0.88. This produces a final value 12% below the original. Adding -20% and +10% would incorrectly suggest a 10% decrease.

WORKED EXAMPLE / A DECREASE FOLLOWED BY AN INCREASE

A quantity starts at 200, falls by 20%, then rises by 20%.

01 Set up the reasoning

After the decrease: 200 × 0.80 = 160.

02 Apply the relationship

After the increase: 160 × 1.20 = 192.

03 Interpret and check

The final amount is 8 below 200, a net decrease of 4%. Equal percentage changes do not cancel because their reference amounts differ.

Keep these distinctions handy

Part of a whole	Part = decimal rate × whole.
Relative change	(New - original)/original × 100%.
Reverse a change	Original = final / multiplier; do not reverse by addition.

PROBLEM-SOLVING AND DATA ANALYSIS / 03 CONNECT & REMEMBER

See the deeper pattern

Choose a convenient starting value

If only a net percentage is requested and no starting value is given, assume a starting amount of 100. A 10% increase followed by a 10% decrease gives 110 then 99, so the net change is -1%. This shortcut works because proportional multipliers affect all starting values in the same relative way.

TODAY'S CHALLENGE / SOLUTION

A quantity increases from 900 to 1260. What is the percentage increase?

1. The increase is 360.

2. Divide by the original 900, then multiply by 100: 40%.

Answer: 40

Mistakes to recognize

- Divide the change by the original, not the new amount.
- A multiplier of 1.25 means a 25% increase, not a 125% increase.
- State whether you are reporting percent or percentage points.

A quick understanding check

What is the reference amount for a percentage increase?

Explanation: The original amount before the increase.

MORE PRACTICE IN YOUR DASHBOARD

Open prepvora.com/app/ and use the SAT question bank. Work on Problem-Solving and Data Analysis, then look for percentage change questions. Solve independently before reviewing the explanation. Use this guide for the theory; use the dashboard for a longer practice session.

Open your dashboard → | Explore the resource library →

Original Prepvora explanations and examples. Scope: this topic, not the entire SAT syllabus. 2026-11-02 ▪ theory-v2