

Learn · Compare unit rates on the same basis

Choose a defensible comparison by finding rates with the same units and direction, then interpret the result for the stated goal.

Totals alone do not compare rates when the amounts of time or goods differ. Choose a common basis such as dollars per notebook or cards per minute. Calculate each rate with the same units and direction. Lower dollars per notebook means lower unit cost; higher cards per minute means faster output. Equal unit rates are a tie for that goal. If a needed quantity is missing, say what information is needed instead of guessing. A choice about unit cost does not establish quality or overall suitability.

Worked model

Two fictional stalls sell identical pencils, with no fees. Cedar charges 12 dollars for 6 pencils; Maple charges 15 dollars for 5 pencils. Cedar: $12 / 6 = 2$ dollars per pencil. Maple: $15 / 5 = 3$ dollars per pencil. Cedar has the lower unit cost. Comparing 12 with 15 alone ignores different pack sizes; same-unit rates explain the choice.

Stall	Dollars	Pencils	Dollars per pencil
Cedar	12	6	2
Maple	15	5	3

RR04-M1 · model

Use the pencil-stall model. Which stall has the lower dollars per pencil? Explain why a common basis matters.

Try it together

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RR04-G1 · guided

Two machines work at constant rates. Machine A sorts 30 cards in 5 minutes. Machine B sorts 28 cards in 4 minutes. Which sorts more cards per minute? Name a common basis, calculate both rates, and compare.

RR04-G2 · guided

At constant speeds cart A travels 12 meters in 4 seconds and cart B travels 15 meters in 5 seconds. Compare meters per second. Is there a faster cart in this model?
