LESSON MAKER PRO

# Does It Add Up?

*Check claims with unit rates.*

**GRADE 7 · 7.A.2.4**

**7.A.2.4** "Use proportional reasoning to assess the reasonableness of solutions."

NAME _____ DATE _____

## CHECK THE RATE

In a proportional relationship, the amount per item stays the same. Divide to find the unit rate, then multiply to check a claim. If the claimed amount does not match, the claim is not reasonable at that rate.

## WORKED EXAMPLE

The table shows wristband prices. A seller says 10 wristbands cost $48 at the same rate. Is that reasonable?

**WRISTBAND PRICES**

| Wristbands | Cost |
|---|---|
| 4 | $18 |
| 6 | $27 |

1. $18 / 4 = $4.50 per wristband.
2. 10 x $4.50 = $45.
3. $48 does not match $45.

**Answer: No. At the same rate, 10 wristbands cost $45.**

## PRACTICE 4 problems

**1** Two notebooks cost $7. Is $28 for 8 notebooks reasonable? Show the expected cost.

**ANSWER** _____

**2** Three smoothies cost $12. Is $24 for 9 smoothies reasonable? Show the expected cost.

**ANSWER** _____

**3** Seven stickers cost $14. Is $42 for 21 stickers reasonable? Show the expected cost.

**ANSWER** _____

**4** Eleven game tokens cost $22. Is $45 for 33 tokens reasonable? Show the expected cost.

**ANSWER** _____

## APPLY IT Show your work

**1** For a class movie night, 13 tickets cost $39. The treasurer predicts $75 for 25 tickets at the same rate. Is the prediction reasonable? Explain.

WORK SPACE

**ANSWER** _____

**2** A music app uses 15 MB to download 3 songs. A friend says 14 songs will use 65 MB at the same rate. Is that reasonable? Explain.

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

The table shows pin prices for a school club. The club has $54. A student says it can buy 40 pins and have $2 left. Is that reasonable? Explain.

**PIN PRICES**

| Pins | Cost |
|---|---|
| 16 | $24 |
| 24 | $36 |

WORK SPACE AND ANSWER

**ANSWER KEY**

# Does It Add Up?

**GRADE 7 · 7.A.2.4**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Two notebooks cost $7. Is $28 for 8 notebooks reasonable? Show the expected cost. | **Yes. The expected cost is $28.** |
| 2 | Three smoothies cost $12. Is $24 for 9 smoothies reasonable? Show the expected cost. | **No. The expected cost is $36.** |
| 3 | Seven stickers cost $14. Is $42 for 21 stickers reasonable? Show the expected cost. | **Yes. The expected cost is $42.** |
| 4 | Eleven game tokens cost $22. Is $45 for 33 tokens reasonable? Show the expected cost. | **No. The expected cost is $66.** |

## PART 2 · APPLY IT

1. **Yes. At $3 per ticket, 25 tickets cost $75.** $39 / 13 = $3 per ticket, and 25 x $3 = $75.
2. **No. At the same rate, 14 songs use 70 MB.** 15 MB / 3 = 5 MB per song, and 14 x 5 MB = 70 MB.

## CHALLENGE

**No. Both prices are $1.50 per pin, so 40 pins cost $60. The club is $6 short.**

Accept any correct unit-rate or equivalent-ratio calculation that supports the decision. For the challenge, students should use a rate consistent with both table rows.