LESSON MAKER PRO

Math Claim Detectives

Use math evidence to test each claim.

GRADE 4 · 4.MP.3

4.MP.3 "Construct viable arguments and critique the reasoning of others."

NAME _____ DATE _____

PROVE IT WITH MATH

A math claim needs evidence. Solve the problem, show a matching equation or check, then explain whether the claim makes sense. If a claim is wrong, point to the step that needs to change.

WORKED EXAMPLE

A game club puts 12 cards in each of 11 prize bags. Jordan says there are 122 cards. Is Jordan correct?

1. Write an equation: 11 x 12.
2. Break apart 12: 11 x 10 = 110 and 11 x 2 = 22.
3. Add: 110 + 22 = 132.
4. Compare 132 to Jordan's claim of 122.

Answer: Jordan is not correct. There are 132 cards, because 11 x 12 = 132.

PRACTICE 6 problems

1 Four garden rows have 15 tomato plants in each row. Ava says there are 19 plants because 4 + 15 = 19. Is Ava correct? Explain with an equation.

ANSWER _____

2 A coach shares 96 trading cards equally among 4 players. Kai says each player gets 92 cards because 96 - 4 = 92. Is Kai correct? Explain.

ANSWER _____

3 Five cartons hold 18 colored pencils each. Rosa says there are 80 pencils. Is Rosa correct? Show how you know.

ANSWER _____

4 A classroom has 63 books to place in stacks of 9. Omar says the books will make 6 full stacks because 9 x 6 = 54. Is Omar correct? Explain.

ANSWER _____

5 A video game event lasts 240 minutes. The first round lasts 75 minutes, and the second round lasts 85 minutes. Mei says 80 minutes are left. Is Mei correct? Show a check.

ANSWER _____

6 At a pizza party, 2/5 of a pizza is eaten at lunch and 1/5 is eaten after school. Ben says 3/10 of the pizza is eaten. Is Ben correct? Explain.

ANSWER _____

APPLY IT Show your work

1 The school store has 168 stickers to put equally into 6 prize envelopes. Talia says each envelope will have 30 stickers because 6 x 30 = 180. Is Talia correct? Find the number of stickers in each envelope and explain why.

WORK SPACE

ANSWER _____

2 At a school concert, 23 families buy a program for $4 each. Diego says the school collects $84. Is Diego correct? Use a break-apart method to explain.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The art club shares 275 beads equally among 8 teams. Priya says each team gets 34 beads with 3 left over because 8 x 34 = 272. Mateo says each team gets 35 beads because 8 x 35 = 280. Who has a viable argument? Explain why the other argument does not work.

WORK SPACE AND ANSWER

ANSWER KEY

Math Claim Detectives

GRADE 4 · 4.MP.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Four garden rows have 15 tomato plants in each row. Ava says there are 19 plants because 4 + 15 = 19. Is Ava correct? Explain with an equation.	**Ava is not correct. 4 x 15 = 60, so there are 60 tomato plants.**
2	A coach shares 96 trading cards equally among 4 players. Kai says each player gets 92 cards because 96 - 4 = 92. Is Kai correct? Explain.	**Kai is not correct. 96 / 4 = 24, so each player gets 24 cards.**
3	Five cartons hold 18 colored pencils each. Rosa says there are 80 pencils. Is Rosa correct? Show how you know.	**Rosa is not correct. 5 x 18 = 90, so there are 90 colored pencils.**
4	A classroom has 63 books to place in stacks of 9. Omar says the books will make 6 full stacks because 9 x 6 = 54. Is Omar correct? Explain.	**Omar is not correct. 63 / 9 = 7, so the books make 7 full stacks.**
5	A video game event lasts 240 minutes. The first round lasts 75 minutes, and the second round lasts 85 minutes. Mei says 80 minutes are left. Is Mei correct? Show a check.	**Mei is correct. 75 + 85 = 160, and 240 - 160 = 80 minutes left.**
6	At a pizza party, 2/5 of a pizza is eaten at lunch and 1/5 is eaten after school. Ben says 3/10 of the pizza is eaten. Is Ben correct? Explain.	**Ben is not correct. 2/5 + 1/5 = 3/5, because the fifths are added and the denominator stays 5.**

PART 2 · APPLY IT

1. **Talia is not correct. Each envelope has 28 stickers.** Since 6 x 30 = 180, Talia's amount is too high. 168 / 6 = 28, and 6 x 28 = 168.
2. **Diego is not correct. The school collects $92.** Break 23 into 20 and 3. Then 20 x 4 = 80 and 3 x 4 = 12, so 80 + 12 = 92.

CHALLENGE

Priya has a viable argument. 8 x 34 = 272, and 275 - 272 = 3, so each team gets 34 beads with 3 left over. Mateo's claim does not work because 8 x 35 = 280, which is more than 275.

Accept equivalent equations, words, or drawings that correctly support the conclusion. Students should name whether the claim is correct and use accurate math evidence, including a check when requested.