LESSON MAKER PRO

Claim Check

Use evidence to test mathematical claims.

GRADE 8 · 8.MP.3

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

NAME _____ DATE _____

BUILD AND TEST CLAIMS

To build a viable argument, state your claim, show a calculation or model, and connect the result to the situation. To critique a claim, check every operation and decide whether the evidence supports the conclusion. A correct answer without evidence is not a complete argument.

WORKED EXAMPLE

A club buys 7 buttons for $42. Maya says each button costs $6. Is Maya's claim viable?

1. Find the unit price: 42 / 7 = 6.
2. Check the claim: 7 x 6 = 42.
3. The check matches the total cost.

Answer: Yes. Maya's claim is viable because each button costs $6.

PRACTICE 6 problems

1 At a snack stand, 4 smoothies cost $18. Lila says each smoothie costs $4.50. Is her claim viable? Show a calculation that supports or disproves it.

ANSWER _____

2 A video begins at 3:25 and ends at 4:10. Mila says the video lasts 35 minutes. Is her claim viable? Explain.

ANSWER _____

3 A game downloads 2.5 GB in 5 minutes at a constant rate. Ren says an 8 GB download will take 16 minutes. Is Ren's reasoning viable? Show your evidence.

ANSWER _____

4 Tari has $30 and saves $9 each week for 5 weeks. Tari says there will be $75 at the end. Is this claim viable? Show a calculation.

ANSWER _____

5 A weather app shows a morning temperature of -3 degrees. The temperature rises 8 degrees, then drops 5 degrees. Kim says the final temperature is 0 degrees. Is Kim correct? Explain.

ANSWER _____

6 On a map, 1 cm represents 14 km. A route measures 2.5 cm. Noah says the real route is 40 km. Critique Noah's claim.

ANSWER _____

APPLY IT Show your work

1 A school dance committee has $120 for a DJ. The DJ charges a $48 setup fee plus $3 for each song request. Priya says the committee can afford 24 song requests. Decide whether Priya's claim is viable, and write an argument using the costs.

WORK SPACE

ANSWER _____

2 A phone plan costs $12 each month plus $2 for each GB of data. Sam has a $30 budget. Diego says Sam can use 10 GB without going over budget. Critique Diego's claim and find the greatest whole number of GB Sam can use.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A club is ordering hoodies. Shop A charges a $25 setup fee plus $2 per hoodie. Shop B charges a $9 setup fee plus $4 per hoodie. Jules says Shop A is always cheaper because its cost per hoodie is lower. Critique Jules's claim. Find when the shops cost the same, then explain which shop is cheaper for smaller and larger orders.

WORK SPACE AND ANSWER

ANSWER KEY

Claim Check

GRADE 8 · 8.MP.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	At a snack stand, 4 smoothies cost $18. Lila says each smoothie costs $4.50. Is her claim viable? Show a calculation that supports or disproves it.	**Yes. 18 / 4 = 4.50, so each smoothie costs $4.50.**
2	A video begins at 3:25 and ends at 4:10. Mila says the video lasts 35 minutes. Is her claim viable? Explain.	**No. From 3:25 to 4:00 is 35 minutes, and 10 more minutes pass before 4:10. The video lasts 45 minutes.**
3	A game downloads 2.5 GB in 5 minutes at a constant rate. Ren says an 8 GB download will take 16 minutes. Is Ren's reasoning viable? Show your evidence.	**Yes. 2.5 / 5 = 0.5 GB per minute, and 8 / 0.5 = 16 minutes.**
4	Tari has $30 and saves $9 each week for 5 weeks. Tari says there will be $75 at the end. Is this claim viable? Show a calculation.	**Yes. 30 + 9(5) = 30 + 45 = 75, so Tari will have $75.**
5	A weather app shows a morning temperature of -3 degrees. The temperature rises 8 degrees, then drops 5 degrees. Kim says the final temperature is 0 degrees. Is Kim correct? Explain.	**Yes. -3 + 8 - 5 = 0, so the final temperature is 0 degrees.**
6	On a map, 1 cm represents 14 km. A route measures 2.5 cm. Noah says the real route is 40 km. Critique Noah's claim.	**No. 14 x 2.5 = 35, so the real route is 35 km, not 40 km.**

PART 2 · APPLY IT

1. **Priya's claim is viable.** The cost of 24 requests is $48 + $3(24) = $120, which matches the committee's budget. Substitute 24 for the number of requests. The total equals the budget, so the claim is supported.
2. **Diego's claim is not viable. Sam can use at most 9 GB.** Using 10 GB costs $12 + $2(10) = $32, which is over budget. Sam can use at most 9 GB because $12 + $2(9) = $30. Write 12 + 2x <= 30 and subtract 12 to get 2x <= 18. Dividing by 2 gives x <= 9.

CHALLENGE

Jules's claim is incomplete. Set the costs equal: 25 + 2x = 9 + 4x. Then 16 = 2x, so x = 8. At 8 hoodies, both shops cost $41. Shop B is cheaper for fewer than 8 hoodies, and Shop A is cheaper for more than 8 hoodies.

Accept equivalent calculations and wording when students correctly state whether each claim is supported and include relevant evidence. For the challenge, accept an equivalent table, equation, or comparison that identifies the equal-cost point and which shop is cheaper on each side of it.