LESSON MAKER PRO

Does It Add Up?

Use estimates to check whether answers make sense.

GRADE 7 · 7.NOS.A.3.b

7.NOS.A.3.b "Evaluate the reasonableness of solutions using estimation, mental math, and understanding of the context."

NAME _____ DATE _____

CHECK THE SIZE

Before you trust an answer, estimate with numbers that are easy to use in your head. Compare your estimate with the answer, then think about whether the answer fits the situation.

WORKED EXAMPLE

Someone says 37.8 × 5.1 = 1,927.8. Is this reasonable? Estimate to check.

1. Round 37.8 to 40 and 5.1 to 5.
2. Multiply 40 × 5 = 200.
3. 1,927.8 is much larger than 200.

Answer: No. The exact product is 192.78.

PRACTICE 6 problems

1 Is 55.18 reasonable for 6.2 × 8.9? Round each factor to the nearest whole number to check.

ANSWER _____

2 Is 8.1 reasonable for 48.6 ÷ 0.6? Use mental math to check.

ANSWER _____

3 Is 11.78 reasonable for 19% of 62? Use nearby numbers to check.

ANSWER _____

4 Is -10.5 reasonable for -7.4 + 3.1? Use mental math to check.

ANSWER _____

5 Is 54 reasonable for 2/3 of 81? Use mental math to check.

ANSWER _____

6 Is 23.6 reasonable for 14.7 - 8.9? Round to whole numbers to check.

ANSWER _____

APPLY IT Show your work

1 Eight friends share a $95.20 bowling bill equally. One friend says each person owes $119. Is this reasonable? Estimate, then find the exact amount each person owes.

WORK SPACE

ANSWER _____

2 A game controller costs $38 and is 15% off. A shopper says the sale price is $5.70. Is this reasonable? Estimate, then find the exact sale price.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A gaming club buys 3 bundles of 18 enamel pins. Each pin costs $2.40. A receipt shows a total of $12.96. Is the total reasonable? Explain in one or two sentences, including an estimate and the exact cost.

WORK SPACE AND ANSWER

ANSWER KEY

Does It Add Up?

GRADE 7 · 7.NOS.A.3.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Is 55.18 reasonable for 6.2 × 8.9? Round each factor to the nearest whole number to check.	**Yes. 6 × 9 = 54, which is close to 55.18.**
2	Is 8.1 reasonable for 48.6 ÷ 0.6? Use mental math to check.	**No. 48.6 ÷ 0.6 = 81.**
3	Is 11.78 reasonable for 19% of 62? Use nearby numbers to check.	**Yes. 20% of 60 is 12, which is close to 11.78.**
4	Is -10.5 reasonable for -7.4 + 3.1? Use mental math to check.	**No. Adding a positive number moves -7.4 toward zero; the sum is -4.3.**
5	Is 54 reasonable for 2/3 of 81? Use mental math to check.	**Yes. One third of 81 is 27, and 2 × 27 = 54.**
6	Is 23.6 reasonable for 14.7 - 8.9? Round to whole numbers to check.	**No. 15 - 9 = 6, and the exact difference is 5.8.**

PART 2 · APPLY IT

1. **No. Each person owes $11.90.** $96 ÷ 8 = $12 is a useful estimate, so $119 is too high. The exact amount is $95.20 ÷ 8 = $11.90.
2. **No. The sale price is $32.30.** The discount is about $6, so the sale price is about $32. The exact discount is $5.70, making the sale price $38 - $5.70 = $32.30.

CHALLENGE

No, 3 × 20 × $2 is about $120, far above $12.96. The exact cost is 3 × 18 × $2.40 = $129.60.

Accept other sensible estimates that support the same conclusions. Exact amounts in the word problems and challenge should match the key.