LESSON MAKER PRO

Quotient Reality Check

Estimate to spot division results that make sense.

GRADE 5 · 5.N.2.1

5.N.2.1 "Estimate solutions to division problems to assess the reasonableness of results."

NAME _____ DATE _____

ESTIMATE, THEN CHECK

Round the number being divided to the nearest hundred and the divisor to the nearest ten. Divide the rounded numbers to estimate the quotient. Compare your estimate with a reported result to decide if that result is reasonable.

WORKED EXAMPLE

A student reports that 2,137 / 52 is about 41. Is that reasonable?

1. Round 2,137 to 2,100.
2. Round 52 to 50.
3. Divide: 2,100 / 50 = 42.
4. 41 is close to 42, so it is reasonable.

Answer: Estimate: 42. Yes, 41 is reasonable.

PRACTICE 6 problems

1 A student reports 612 / 19 = 32. Estimate the quotient. Is 32 reasonable?

ANSWER _____

2 A student reports 1,217 / 39 = 310. Estimate the quotient. Is 310 reasonable?

ANSWER _____

3 A student reports 2,385 / 61 = 39. Estimate the quotient. Is 39 reasonable?

ANSWER _____

4 A student reports 3,576 / 89 = 4. Estimate the quotient. Is 4 reasonable?

ANSWER _____

5 A student reports 1,793 / 29 = 62. Estimate the quotient. Is 62 reasonable?

ANSWER _____

6 A student reports 4,784 / 81 = 590. Estimate the quotient. Is 590 reasonable?

ANSWER _____

APPLY IT Show your work

1 A school club has 2,416 stickers to share equally among 59 students. Someone says each student will get about 400 stickers. Estimate the number per student. Is 400 reasonable?

WORK SPACE

ANSWER _____

2 An arcade prize costs 81 tickets. Maya has 3,185 tickets and says she can get about 39 prizes. Estimate how many prizes she can get. Is 39 reasonable?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A game club scored 5,588 points across 69 players. A player says the average was about 81 points per player. Round both numbers to estimate the average. Then multiply 69 by 81 to check the claim. Explain whether 81 is reasonable.

WORK SPACE AND ANSWER

ANSWER KEY

Quotient Reality Check

GRADE 5 · 5.N.2.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A student reports 612 / 19 = 32. Estimate the quotient. Is 32 reasonable?	**600 / 20 = 30. Yes, 32 is reasonable.**
2	A student reports 1,217 / 39 = 310. Estimate the quotient. Is 310 reasonable?	**1,200 / 40 = 30. No, 310 is much too large.**
3	A student reports 2,385 / 61 = 39. Estimate the quotient. Is 39 reasonable?	**2,400 / 60 = 40. Yes, 39 is reasonable.**
4	A student reports 3,576 / 89 = 4. Estimate the quotient. Is 4 reasonable?	**3,600 / 90 = 40. No, 4 is much too small.**
5	A student reports 1,793 / 29 = 62. Estimate the quotient. Is 62 reasonable?	**1,800 / 30 = 60. Yes, 62 is reasonable.**
6	A student reports 4,784 / 81 = 590. Estimate the quotient. Is 590 reasonable?	**4,800 / 80 = 60. No, 590 is much too large.**

PART 2 · APPLY IT

1. **About 40 stickers per student. No, 400 is not reasonable.** Round to 2,400 / 60 = 40 stickers per student. The reported amount is ten times the estimate.
2. **About 40 prizes. Yes, 39 is reasonable.** Round to 3,200 / 80 = 40 prizes. Since 39 is close to 40, the claim is reasonable.

CHALLENGE

5,600 / 70 = 80 points per player. Also, 69 × 81 = 5,589, just 1 point more than the club scored. Since 81 is close to the estimate and the multiplication check is only 1 point off, 81 is reasonable.

Accept estimates made with other nearby compatible numbers when the division and reasonableness decision are supported. Reported results need not be exact to be reasonable.