LESSON MAKER PRO

Quotient Reality Check

Estimate a quotient, then check if it makes sense.

GRADE 6 · 6.NOS.A.1.a

6.NOS.A.1.a "Extend estimation strategies to estimate and assess the reasonableness of quotients."

NAME _____ DATE _____

ROUND, DIVIDE, CHECK

Round the dividend and divisor to nearby numbers that are easy to divide. The result is an estimate, not an exact quotient. To check a proposed quotient, multiply it by the divisor and see whether the product is close to the dividend.

WORKED EXAMPLE

Estimate 593 / 31. Round 593 to the nearest hundred and 31 to the nearest ten.

1. 593 rounds to 600.
2. 31 rounds to 30.
3. 600 / 30 = 20.

Answer: About 20

PRACTICE 6 problems

1 Estimate 418 / 38. Round the dividend to the nearest hundred and the divisor to the nearest ten.

ANSWER _____

2 Estimate 724 / 18. Round the dividend to the nearest hundred and the divisor to the nearest ten.

ANSWER _____

3 Estimate 1,482 / 51. Round the dividend to the nearest hundred and the divisor to the nearest ten.

ANSWER _____

4 Estimate 2,046 / 39. Round the dividend to the nearest hundred and the divisor to the nearest ten.

ANSWER _____

5 A student says 846 / 42 is about 200. Round the dividend to the nearest hundred and the divisor to the nearest ten. Give your estimate and tell whether 200 is reasonable.

ANSWER _____

6 A student says 1,574 / 78 is about 20. Round the dividend to the nearest hundred and the divisor to the nearest ten. Give your estimate and tell whether 20 is reasonable.

ANSWER _____

APPLY IT Show your work

1 A video club has 1,238 MB of footage to split evenly among 19 short videos. Estimate the number of MB per video. Round the total MB to the nearest hundred and the number of videos to the nearest ten.

WORK SPACE

ANSWER _____

2 A group of 29 friends pays $873 in total for concert tickets. Estimate the cost per ticket. Round the total cost to the nearest hundred and the number of friends to the nearest ten.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Two students estimate 2,371 / 48. Ari rounds to 2,400 / 50 and gets 48. Jo says the quotient is about 480. Use nearby multiplication facts to explain which estimate is reasonable. Is the actual quotient greater or less than 48?

WORK SPACE AND ANSWER

ANSWER KEY

Quotient Reality Check

GRADE 6 · 6.NOS.A.1.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Estimate 418 / 38. Round the dividend to the nearest hundred and the divisor to the nearest ten.	**About 10**
2	Estimate 724 / 18. Round the dividend to the nearest hundred and the divisor to the nearest ten.	**About 35**
3	Estimate 1,482 / 51. Round the dividend to the nearest hundred and the divisor to the nearest ten.	**About 30**
4	Estimate 2,046 / 39. Round the dividend to the nearest hundred and the divisor to the nearest ten.	**About 50**
5	A student says 846 / 42 is about 200. Round the dividend to the nearest hundred and the divisor to the nearest ten. Give your estimate and tell whether 200 is reasonable.	**800 / 40 = 20, so 200 is not reasonable.**
6	A student says 1,574 / 78 is about 20. Round the dividend to the nearest hundred and the divisor to the nearest ten. Give your estimate and tell whether 20 is reasonable.	**1,600 / 80 = 20, so 20 is reasonable.**

PART 2 · APPLY IT

1. **About 60 MB per video** Round 1,238 to 1,200 and 19 to 20. Then 1,200 / 20 = 60.
2. **About $30 per ticket** Round $873 to $900 and 29 to 30. Then $900 / 30 = $30.

CHALLENGE

Ari's estimate is reasonable: 48 × 50 = 2,400 is close to 2,371, but 48 × 480 = 23,040 is far too large. The actual quotient is greater than 48 because 48 × 48 = 2,304, which is less than 2,371.

For the specified rounding methods, accept the listed estimates with or without the word "about." In the challenge, accept any correct multiplication comparison that supports both conclusions.