LESSON MAKER PRO

# Quotient Check

*Estimate first, then decide whether an answer makes sense.*

**GRADE 6 · 6.NOS.B.2.a**

**6.NOS.B.2.a** "Extend estimation strategies to estimate and assess the reasonableness of quotients."

NAME _____ DATE _____

## ESTIMATE AND CHECK

Round the dividend and divisor to nearby numbers that divide easily. Divide the rounded numbers to estimate the quotient. A proposed answer can be reasonable even when it differs from your estimate.

## WORKED EXAMPLE

Estimate 416 / 61 by rounding each number to the nearest ten.

1. Round 416 to 420.
2. Round 61 to 60.
3. Divide: 420 / 60 = 7.

**Answer: About 7**

## PRACTICE 6 problems

**1** Round each number to the nearest ten. Estimate 317 / 42.

**ANSWER** _____

**2** Round each number to the nearest ten. Estimate 453 / 49.

**ANSWER** _____

**3** Round each number to the nearest ten. Estimate 703 / 68.

**ANSWER** _____

**4** Round 1,192 to the nearest hundred and 59 to the nearest ten. Estimate 1,192 / 59.

**ANSWER** _____

**5** A student says 498 / 51 is about 100. Round each number to the nearest ten. What is your estimate, and is the student's answer reasonable?

**ANSWER** _____

**6** A student says 871 / 29 is about 30. Round each number to the nearest ten. What is your estimate, and is the student's answer reasonable?

**ANSWER** _____

## APPLY IT Show your work

**1** The total size of 32 game updates is 1,792 MB. About how many MB is each update? Round 1,792 to the nearest hundred and 32 to the nearest ten.

WORK SPACE

**ANSWER** _____

**2** A photography club puts 2,375 photos into 79 digital albums, with about the same number in each. A student says that is about 300 photos per album. Round 2,375 to the nearest hundred and 79 to the nearest ten. Is the student's answer reasonable?

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

A student claims 3,648 / 48 = 76. Round 3,648 to the nearest hundred and 48 to the nearest ten to estimate the quotient. Then use multiplication to check whether the student's claim is exactly correct. Show both checks.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Quotient Check

**GRADE 6 · 6.NOS.B.2.a**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Round each number to the nearest ten. Estimate 317 / 42. | **320 / 40 = 8, so about 8** |
| 2 | Round each number to the nearest ten. Estimate 453 / 49. | **450 / 50 = 9, so about 9** |
| 3 | Round each number to the nearest ten. Estimate 703 / 68. | **700 / 70 = 10, so about 10** |
| 4 | Round 1,192 to the nearest hundred and 59 to the nearest ten. Estimate 1,192 / 59. | **1,200 / 60 = 20, so about 20** |
| 5 | A student says 498 / 51 is about 100. Round each number to the nearest ten. What is your estimate, and is the student's answer reasonable? | **500 / 50 = 10, so about 10; no, 100 is not reasonable** |
| 6 | A student says 871 / 29 is about 30. Round each number to the nearest ten. What is your estimate, and is the student's answer reasonable? | **870 / 30 = 29, so about 29; yes, 30 is reasonable** |

## PART 2 · APPLY IT

1. **About 60 MB per update** Round to 1,800 / 30. The estimated quotient is 60 MB per update.
2. **No; about 30 photos per album** Round to 2,400 / 80 = 30. An estimate of 300 is ten times as large.

## CHALLENGE

**3,600 / 50 = 72, so 76 is reasonable. Also, 48 × 76 = 3,648, so the claim is exactly correct.**

Accept estimates with or without the word “about.” For the challenge, students must show both the rounded-number estimate and the multiplication check.