



**Why would you use compatible numbers to estimate instead of dividing 159 by 75?**

[Compatible numbers are easier to work with, and you can use mental math.]

**Find compatible numbers for 159 and 75.**

**Think** 16 can be divided evenly by 8.

160 and 80 are close to 159 and 75.

So, 160 and 80 are compatible numbers.

**Can you also use 150 and 75 as compatible numbers to estimate the quotient?**

[Yes, 159 is close to 150 and it is easy to find  $150 \div 75$ .]

**Divide.**

$$160 \div 80 = 2.$$

So, Betty charged about \$2 for each bracelet.

Check for reasonableness:

$$2 \times 80 = 160$$

**If you used the compatible numbers 150 and 75, would your estimate be the same?** [Yes,  $150 \div 75 = 2$ ]

The question asks, "About how much?" So, an estimate is enough.

Use compatible numbers to estimate  $159 \div 75$ .

**Find compatible numbers for 159 and 75.**

**Think** 16 can be divided evenly by 8.

160 and 80 are close to 159 and 75.

So, 160 and 80 are compatible numbers.

**Divide.**

$$160 \div 80 = 2.$$

So, Betty charged about \$2 for each bracelet.

Check for reasonableness:

$$2 \times 80 = 160$$

### Problem Solving

Exercise	Content
27	Estimation ( $600 \div 30$ )
28	Multiple Step [ $(\$3 \times 22) + (2 \times \$10)$ ]
29	Estimation ( $140 \div 20$ )
30	Multiple Step [ $(\$112 - \$88) \div 8$ ]
31	Estimation ( $800 \times 60$ )
32	Properties
33	Extra Information Subtraction ( $\$38 - \$12$ )
34	Communicate Math Understanding Estimating Quotients

Students use underlying processes and mathematical tools for Exercises 27–34. Remind students to check for reasonableness when solving each problem.

Exercise 32

**Test-Taking Tip: Making Smart Choices** Encourage students to eliminate wrong answers. *Which operation is used in the given equation?* [Addition] *Do all of the answers indicate that operation?* [No, D uses multiplication.]

**Early Finishers** Write your own division exercise and show two different ways you can make a reasonable estimate. Find each estimate.

27. A high school volleyball team has made it to the state tournament. There are 586 students that want to go, and 32 students can fit on each bus. About how many buses are needed?  
**About 20 buses**

29. There are 135 comets that are visible from Earth every 20 years or less. What is an estimate of how many of these comets are seen each year?  
**7 comets**

31. Estimate the product for the following expression.

$$805 \times 62$$

- A 4,800  
☒ B 48,000  
 C 54,000  
 D 64,000

33. Donald bought a clock radio. The radio weighs 18 ounces. Donald paid \$12 less than the normal sales price. If the normal sales price was \$38, how much did Donald spend on the radio?  
**\$26**

28. Each player contributed \$3 for a gift for the head coach. The two assistant coaches each donated \$10. If there were 22 players on the team, how much money did the team raise in all?  
**\$86**

30. Leon bought 8 CDs on sale for \$88. The regular price for 8 CDs is \$112. How much did Leon save per CD by buying them on sale?  
**\$3 per CD**

32. Which property does the following equation illustrate?

$$2 + (11 + 19) = (2 + 11) + 19$$

- A Commutative Property of Addition  
☒ B Associative Property of Addition  
 C Identity Property of Addition  
 D Commutative Property of Multiplication

34. **Writing to Explain** Autumn needs to estimate the quotient  $817 \div 91$ . Explain how she can use compatible numbers to make a reasonable estimate.  
**See margin.**

34. Autumn can use 810 instead of 817 and 90 instead of 91. Then she can estimate  $810 \div 90 = 9$ .