Teacher Notes

Lesson 11: Fraction Multiplication and the Products of Decimals

Classwork

Exploratory Challenge

You not only need to solve each problem, but your groups also need to prove to the class that the decimal in the product is located in the correct place. As a group, you are expected to present your informal proof to the class.

a. Calculate the product. $34.62 \times 12.8 = 443.136$

Estimation: $36 \times 13 = 455$

Using Fractions: $34\frac{62}{100} \times 12\frac{8}{10} = \frac{3462}{100} \times \frac{128}{10} = \frac{443,136}{1,000}$

Because the denominator is 1,000, the last digit should be in the thousandths place when writing the fraction as a decimal. Therefore answer is 443.136

b. Xavier earns $11.50 per hour working at the nearby grocery store. Last week, Xavier worked for 13.5 hours. How much money did Xavier earn last week? Remember to round to the nearest penny.

$11.5 \times 13.5 = 155.25$

Estimation: $12 \times 14 = 168$.

Fractions: $11\frac{5}{10} \times 13\frac{5}{10} = \frac{115}{10} \times \frac{135}{10} = \frac{15,525}{100}$

Because the denominator is 100, the last digit should be in the hundredths place when writing the fraction as a decimal. Therefore, answer should be $155.25.

Discussion

Record notes from the Discussion in the box below.

Calculate the sum of the decimal digits in the factors. The sum represents the number of decimal digits in the product.

Exercises

1. Calculate the product. 324.56×54.82

$324.56 \times 54.82 = 17,792.3792$

(2) Kevin spends \$11.25 on lunch every week during the school year. If there are 35.5 weeks during the school year, how much does Kevin spend on lunch over the entire school year? Remember to round to the nearest penny.

$\$11.25 \times 35.5 = \$399.375 \approx 399.38$,

Kevin would spend \$399.38 on lunch over the entire school year.

3. Gunnar's car gets 22.4 miles per gallon, and his gas tank can hold 17.82 gallons of gas. How many miles can Gunnar travel if he uses all of the gas in the gas tank?

$22.4 \times 17.82 = \$399.168$

Gunnar can drive 399.168 miles on an entire tank of Gas.

4. The principal of East High School wants to buy a new cover for the sand pit used in the long-jump competition. He measured the sand pit and found that the length is 29.2 feet and the width is 9.8 feet. What will the area of the new cover be?

$29.2 \times 9.8 = 286.14$

The cover should have an area of 286.14 square feet.