

Section Overview



Estimating with Decimals

Lesson 3-1

Why? Estimation can be used to determine whether answers are reasonable. Estimation is also a useful strategy for eliminating incorrect answers on multiple-choice tests.

Round each decimal to the nearest whole number.

Estimate:
 $8.649 + 14.07$
 $9 + 14 = 23$

Use compatible numbers, numbers that are easy to work with mentally.

Estimate:
 $19.3 \div 6.5$
 $18 \div 6 = 3$

Operations with Decimals

Lessons 3-2 through 3-5

Why? The most common application of decimal operations is using money. Align the decimal point when adding or subtracting decimals. The sign rules for adding and subtracting decimals are the same as for integers.

Add $5.63 + 11.8$.

$$\begin{array}{r} 11.80 \\ + 5.63 \\ \hline 17.43 \end{array}$$

Use zeros at the end when necessary to write an **equivalent decimal** so that all addends have the same number of digits to the right of the decimal point.

Subtract $12 - 4.31$.

$$\begin{array}{r} 12.00 \\ - 4.31 \\ \hline 7.69 \end{array}$$

Multiply $0.004 \cdot (-2.6)$.

$$0.004 \cdot (-2.6) = -0.0104$$

3 decimal places

1 decimal place

$3 + 1 = 4$ decimal places

Divide $9.06 \div 0.3$.

$$\begin{aligned} 9.06 \div 0.3 \\ = (10 \cdot 9.06) \div (10 \cdot 0.3) \\ = 90.6 \div 3 \\ = 30.2 \end{aligned}$$

Make the **divisor** a whole number by multiplying the dividend and the divisor by the same **power of ten**.

Solving Equations Containing Decimals

Lesson 3-6

Why? To solve one-step equations with decimals, apply the rules for computing with decimals when you are isolating the variable.

Equation	Operation	Inverse Operation	Isolate the Variable
$x + 9.7 = 15$	Addition	Subtraction	$x = 5.3$
$y - 0.5 = -3.9$	Subtraction	Addition	$y = -3.4$
$-6 \cdot n = 2.4$	Multiplication	Division	$n = -0.4$
$\frac{a}{1.7} = 3$	Division	Multiplication	$a = 5.1$