

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**ADDING AND SUBTRACTING DECIMALS**  
**N-GEN MATH<sup>®</sup> 6**



Adding and subtracting fractions can be difficult because of their unlike denominators. But, decimals (which are simply fractions with denominators of 10, 100, 1000, etcetera) are much simpler to add and subtract. The first exercise will illustrate why.

**Exercise #1:** Consider the sum  $0.35 + 0.23$ .

- (a) Write each decimal in its expanded, fraction form.                      (b) Sum the two numbers and convert back to decimal form. What do you notice?

Adding decimals becomes more difficult when regrouping is involved, but we can still understand the addition of decimals if we review some basic facts.

**Exercise #2:** Simplify each of the following.

(a)  $\frac{10}{10}$

(b)  $\frac{10}{100}$

(c)  $\frac{10}{1000}$

(d)  $\frac{10}{10000}$

**Exercise #3:** Consider the sum  $0.79 + 0.45$ .

- (a) Write each decimal in its expanded, fraction form.                      (b) Add the two numbers and convert back to a decimal. Make sure to show how you regroup.

What we see is that adding decimals works exactly like adding whole numbers, including the use of **regrouping** (or carrying). This is because, like with whole numbers, each decimal place is ten-times greater than the one to its right.



**Exercise #4:** Find each of the following sums. Regroup when necessary.

$$\begin{array}{r} 5.4 \\ (a) + 3.2 \\ \hline \end{array}$$

$$\begin{array}{r} 7.8 \\ (b) + 4.5 \\ \hline \end{array}$$

$$\begin{array}{r} 26.43 \\ (c) + 7.19 \\ \hline \end{array}$$

$$\begin{array}{r} 5.782 \\ (d) + 8.571 \\ \hline \end{array}$$

$$(e) 5.8 + 9.65$$

$$(f) 8.42 + 3.08$$

$$(g) 17.75 + 9.25$$

$$(h) 8.009 + 6.5$$

As with whole numbers, **decimal subtraction** can be more difficult because of our need to borrow (or regroup) when needed. Keep in mind, borrowing will work just like it does for whole numbers since each digit represents ten times the amount of the digit one place to the right.

**Exercise #5:** Find each of the following differences. Borrow when necessary.

$$\begin{array}{r} 5.9 \\ (a) - 3.2 \\ \hline \end{array}$$

$$\begin{array}{r} 9.2 \\ (b) - 6.7 \\ \hline \end{array}$$

$$\begin{array}{r} 12.71 \\ (c) - 4.53 \\ \hline \end{array}$$

$$\begin{array}{r} 8.613 \\ (d) - 7.258 \\ \hline \end{array}$$

$$(e) 9.57 - 2.71$$

$$(f) 8 - 1.35$$

$$(g) 5.6 - 2.89$$

$$(h) 21.81 - 13.67$$

**Exercise #6:** Gas costs \$3.18 per gallon in New York and \$2.73 in Georgia. Set up and evaluate a difference that shows how much more gas costs in New York than in Georgia.



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**ADDING AND SUBTRACTING DECIMALS**  
**N-GEN MATH<sup>®</sup> 6 HOMEWORK**

**FLUENCY**

1. Find the sum  $0.27 + 0.52$  by first rewriting the decimals using their expanded fraction form and then combining the fractions. Rewrite your final answer in decimal form.

2. Find each of the following sums.

$$\begin{array}{r} 6.7 \\ (a) \ +5.9 \\ \hline \end{array}$$

$$\begin{array}{r} 27.3 \\ (b) \ +8.93 \\ \hline \end{array}$$

$$\begin{array}{r} 35.38 \\ (c) \ +19.14 \\ \hline \end{array}$$

$$\begin{array}{r} 6.193 \\ (d) \ +19.058 \\ \hline \end{array}$$

3. Find each of the following sums. Rewrite if necessary.

$$(a) \ 7.28 + 5.14$$

$$(b) \ 28.35 + 7.94$$

$$(c) \ 8.73 + 5.5$$

$$(d) \ 9.352 + 0.875$$

4. Kirk believes that  $0.6$  and  $0.5$  are added, the sum must be equal to  $0.11$ . Explain why Kirk's answer does not make sense and what the correct answer should be.

5. Find each of the following differences.

$$\begin{array}{r} 9.7 \\ (a) \ -4.2 \\ \hline \end{array}$$

$$\begin{array}{r} 12.3 \\ (b) \ -9.7 \\ \hline \end{array}$$

$$\begin{array}{r} 8.35 \\ (c) \ -0.73 \\ \hline \end{array}$$

$$\begin{array}{r} 5.194 \\ (d) \ -3.815 \\ \hline \end{array}$$

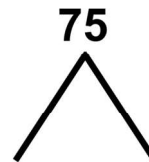
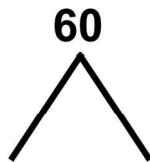


## USING YOUR MATH

- Margaret bought an ice cream sandwich that cost \$1.57 and a soda that cost \$2.35 at the swimming pool. How much money did Margaret spend?
- If Janice bought 3.85 pounds of onions and 5.49 pounds of potatoes at the store, what was the total weight of onions and potatoes she bought? Show how you found your answer.
- If Thomas is 1.83 meters tall and his daughter Ada is 1.47 meters tall, how much taller is Thomas than Ada in meters? Justify your answer.

## REVIEWING YOUR MATH

- Create a factor tree for both of the following numbers below and write the prime factorization of each number.



- What is the greatest common factor of 60 and 75?
- Find the following quotient. Express your final answer in simplified form as a mixed number.

$$2\frac{3}{4} \div \frac{3}{8}$$

