

Add and Subtract Decimals

Here is a “trick” to help you with decimal addition and subtraction:

Give all of the addends the same amount of decimal digits by “tagging” zeros onto the ends.

For example, in the problem $0.024 + 0.1 + 0.05$, if we place two zeros onto the end of 0.1 and one zero onto the end of 0.05, then all of the addends will have three decimal digits. (see the box on the top right) →

Now, you can simply add how many thousandths each number has: $24 + 100 + 50 = 174$. The answer has three decimals, so it is 0.174.

The column-addition on the right shows the same principle. →

$$\begin{array}{r} 0.024 + 0.1 + 0.05 \\ \downarrow \quad \downarrow \quad \downarrow \\ 0.024 + 0.100 + 0.050 = 0.174 \end{array}$$

$$\begin{array}{r} 0.024 \\ 0.100 \\ + 0.050 \\ \hline 0.174 \end{array}$$

1. Write the decimal that is more or less than the given decimal by the specified amount.

a.

O	t	h	th	t-th
0	0	0	2	

1 tenth more: _____

1 thousandth less: _____

1 ten-thousandth more: _____

b.

O	t	h	th	t-th	h-th
0	8	5			

2 hundredths less: _____

2 ten-thousandths more: _____

2 hundred-thousandths more: _____

2. Add.

a. $0.2 + 0.8 =$

d. $0.03 + 0.06 =$

g. $0.09 + 0.007 =$

b. $0.2 + 0.08 =$

e. $0.03 + 0.0006 =$

h. $0.9 + 0.007 =$

c. $0.2 + 0.0008 =$

f. $0.03 + 0.00006 =$

i. $0.00009 + 0.007 =$

3. Add or subtract in your head. First, change the fraction into a decimal.

a. $1 \frac{3}{10} + 0.56$

b. $0.2 + \frac{27}{100}$

c. $3.19 + \frac{5}{10}$

d. $2 \frac{289}{1,000} - 0.1$

4. Continue the sequences for six more numbers. Use mental math.

a. 0.25, 0.28, 0.31,

b. 3.275, 3.28, 3.285,

5. Two of these calculations are in error. Find them and explain why they are wrong.

a. $0.15 + 0.2 = 0.17$	b. $1.06 + 0.04 = 1.1$	c. $0.9 - 0.08 = 0.1$
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6. Find the value of the expression $0.5 - y$ when

a. $y = 0.2$	b. $y = 0.02$	c. $y = 0.002$
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7. Calculate in columns. You may use extra (grid) paper. Remember to line up the decimal points. But first, *estimate* the answer. For estimating, round the numbers in such a way that you can calculate in your head. If your final answer is far from your estimate, you may have made an error.

a. $6.907 - 4.80056$ Estimate: _____	b. $2 + 9.082 + 0.038284 + 4.5028$ Estimate: _____	c. $410 - 25.6 - 4.59384$ Estimate: _____
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8. First change the fractions to decimals. Then calculate.

a. $\frac{4}{10,000} + \frac{4}{100}$	b. $\frac{900}{100} + \frac{9}{10,000} - \frac{1}{2}$
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Puzzle Corner

Solve the equation: $3.08 - x - 0.39192 = 0.00311$