Adding and Subtracting Decimals





Place Value

When adding and subtracting decimals, it is important to understand the place value of the numbers.

With 11 + 1.1 the numbers both have 2 digits, however only one digit in each number has the same place value.

11 + 1.1 is not 2.2 or 22

11 + 1.1 = 12.1



Right or Wrong?

Here are some calculations involving decimals. Which have the correct answer? Where the answer is incorrect, can you explain what mistakes have been made?

23 + 2.3 = 25.3	correct	
38 + 3.8 = 38.38	incorrect 38 + 3.8 = 41.8	
5.6 + 5.6 = 10.12	incorrect 5 + 5 = 10, 6 + 6 = 12, but 0.6 + 0.6 = 1.2, so 5.6 + 5.6 = 11.2	
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Answers

Mental Practice

Calculate the answers to these in your head:

2.4 + 24 =	26.4	5.7 – 0.57 =	5.13	
56 - 5.6 =	50.4	0.04 + 37 =	37.04	
19 + 9.1 =	28.1	7 - 0.06 =	6.94	
87 + 0.34 =	87.34	280 - 63.2 =	216.8	
56 - 0.26 =	55.74	0.23 + 0.062 =	0.292	
Write some of your ov the answer yourself.	Hide Answers	X		

Correct?

With formal methods, you need to line up the different place values. The decimal point will also be lined up.

Which calculation is correct? Explain why.

345.6 + 49.24 345.6 <u>+ 49.24</u>

The matching place values and decimal point are lined up.

The matching place values and decimal point are **not** lined up.

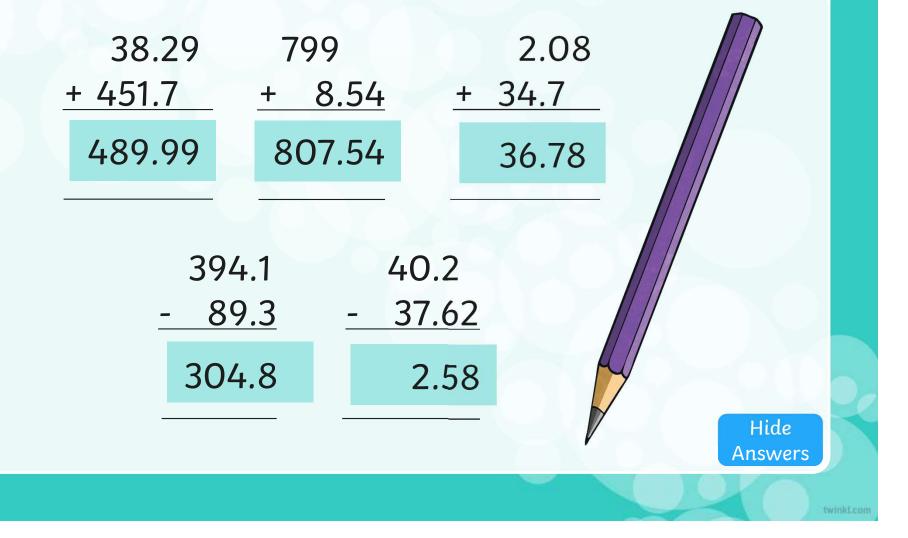
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Answers

Formal Methods

Complete these calculations using a formal written method.



Using O's

Sometimes it is helpful to place a zero (0) where a digit is not given.

	345.6	
+	49.24	

345.60 + 49.24

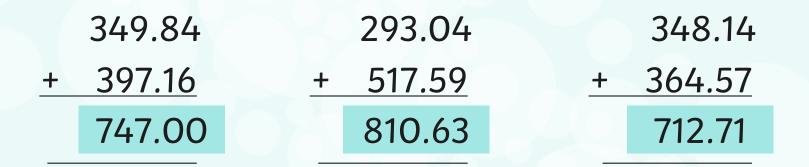
It is more useful with subtraction.



×,			Adding		
1	Step 1	Step 2	Step 3	Step 4	Step 5
+	345.6 <u>49.24</u> . 4	345.6 + 49.24 .84	¹ 345.6 + 49.24 4.84	$3\frac{1}{4}5.6$ + 49.24	3 ¹ 45.6 + 49.24
Cor in se by sm O F 4 F	Place the cimal in the rect position the answer ection. Start adding the nallest value together. nundredths + nundredths = hundredths	6 tenths + 2 tenths= 8 tenths	5 ones + 9 ones = 14 ones Place the 1 ten into the tens column and the 4 in the ones column in the answer section.	94.84 1 ten + 4 tens + 4 tens = 9 tens	394.84 3 hundreds + 0 hundreds= 3 hundreds

answer section.

Quick Practice

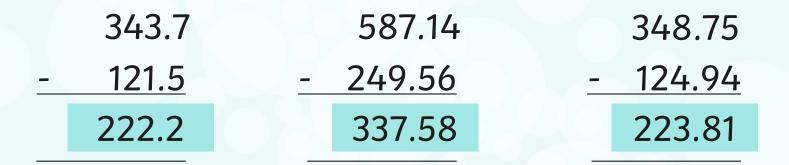




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Subtracting					
Step 1	Step 2	Step 3	Step 4	Step 5	
5 345.∕0 ¹ 0 - 49.24 . 6	5 345. 6 0 - 49.24 .36	³ 5 345.60 - 49.24 6.36	² ³ ⁵ 3 ⁴ 5.6 ¹ 0 - 49.24 96.36	^{2 3 5} 345.60 - 49.24 296.36	
Start by subtracting the smallest value. In this example, this is the hundredths column. 0 – 4 hundredths. This cannot be done therefore we exchange a tenth for 10 hundredths and regroup these. 10 + 0 = 10 hundredths. 10 hundredths – 4	5 tenths - 2 tenths = 3 tenths	5 ones – 9 ones. This cannot be done so we exchange 1 ten for 10 ones and regroup these into the ones column: 10 ones + 5 ones = 15 ones. 15 ones – 9 ones = 6 ones.	3 tens - 4 tens. This cannot be done, therefore we exchange 1 hundred for 10 tens and regroup these into the tens column: 10 tens + 3 tens = 13 tens. 13 tens. = 9 tens	2 hundreds - 0 hundreds = 2 hundreds	
hundredths = 6 hundredths.	Remember to plac	ce the answers w answer s		columns in the	

Quick Practice





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Formal Practice

Calculate the answers to these using a formal method:

Write some of your ov the answer yourself.	Hide Answers			
516.4 - 67.39 =	449.01	492.78 + 3987.59 =	4480.37	
23.87 + 198.5 =	222.37	9023.7 - 298.53 =	8725.17	
64 + 287.2 =	351.2	832.19 - 287.4 =	544.79	
703 - 27.7 =	675.3	323.47 + 298.2 =	621.67	
278 + 87.5 =	365.5	23.01 - 8.3 =	14.71	

