



# M2e: Can add with decimals to two places (including money)

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# Vocabulary: Adding with decimals

increase  
sum  
whole  
decimal

# Review our previous learning

1.  $45.8 \times 100 =$

5.  $78.12$  divide by  $10 =$

2.  $571 \times 100 =$

6.  $865$  divide by  $100 =$

3.  $\frac{1}{3} \times \frac{4}{5} =$

7.  $\frac{3}{8} - \frac{1}{10} =$

4.  $\frac{5}{7} + \frac{2}{4} =$

8.  $7869$  divide my  $10 =$

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## Decimal numbers and place value

When adding **decimal numbers**, it is especially important that we understand the **place value** of each **digit**. Let's remind ourselves...



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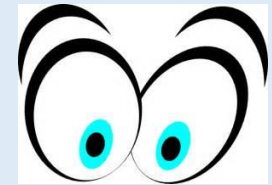
Adding decimal  
numbers:  
expanded method

$$27.62 + 19.09 =$$

So

$$27.62 + 19.09 = 46.71$$

T	O	.	10th	100th
2	7	.	6	2
<hr/>				
3	0	.	0	0
<hr/>				
1	6	.	0	0
<hr/>				
0	6	.		
<hr/>				
+	0	.	1	1
<hr/>				
4	6	.	7	1
<hr/>				



It is important  
that you  
understand the  
**value** of each  
digit:

$$0.02 + 0.09 = 0.11$$

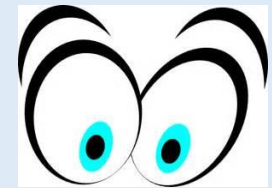
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# Adding decimal numbers: short addition method

Let's complete  
 the same  
 calculation  
 using the **short  
 addition**  
 method:

$$27.62 + 19.09 =$$

	T	O	.	10th	100th
	2	7	.	6	2
+	1	9	.	0	9
<hr/>					
	4	6	.	7	1
<hr/>					
	1			1	



It is also important to  
**line the digits up  
 correctly** with the  
 decimal point in the  
 right place!

**So**  
 **$27.62 + 19.09 = 46.71$**

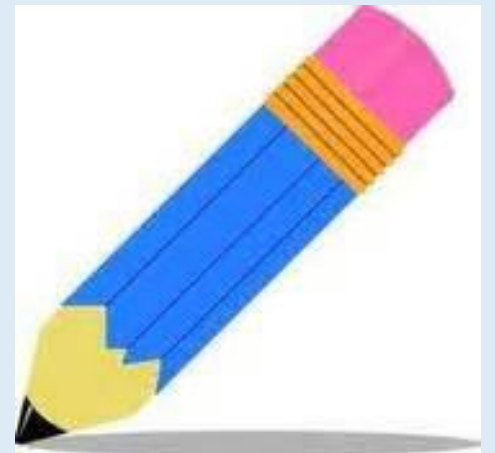
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## Your turn

Complete the following calculations using **both** the **expanded method** and the **short addition method**.

$$32.64 + 52.06 =$$

$$17.03 + 33.86 =$$





## Can add with decimals to two places (including money)

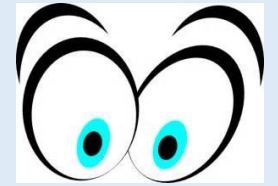
Sometimes we will need to add **more than two decimal numbers**. Let's try this calculation using the **expanded method**:

$$39.84 + 47.6 + 4.5 =$$

So

$$39.84 + 47.6 + 4.5 = 91.94$$

	T	O	.	10th	100th
	4	7	.	6	
+	3	9	.	8	4
				4	5
<hr/>					
	7	0	.	0	0
	2	0	.	0	0
				1	9
+				0	0
				4	
<hr/>					
	9	1	.	9	4
<hr/>					



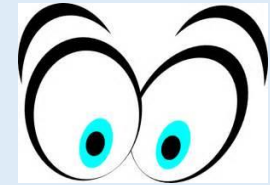
Remember, it's helpful to put the **largest number on top!** Also, don't forget to **line up the digits correctly** with the decimal point in the right place.

Can add with decimals to two places  
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# Adding decimal numbers: short addition method

Let's complete  
the same  
calculation  
using the **short  
addition**  
method:

$$39.84 + 47.6 + 4.5 =$$



	T	O	.	10th	100th
	4	7	.	6	
+	3	9	.	8	4
				4	5
<hr/>					
	9	1	.	9	4
	2	1			

**So**

$$39.84 + 47.6 + 4.5 = 91.94$$

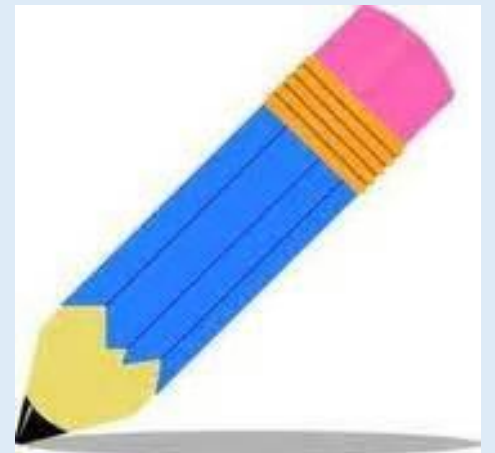
Can add with decimals to two places  
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## Your turn

Complete the following calculations using **both** the **expanded method** and the **short addition method**.

$$A. 21.54 + 53.4 + 2.6 =$$

$$B. 6.2 + 27.3 + 42.1 =$$



# Problem Solving

The measurements of my room are 5.45m, 6.75m, 6m and 4.84m. What is the perimeter of my room?



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## Solving problems involving money

These methods can also be applied to **decimal numbers** in the context of **money**.  
Let's look at an example...

## Can add with decimals to two places (including money)

### Adding decimal numbers (money): expanded method

$$\text{£}27.50 + \text{£}8.35 + 87\text{p} =$$

**So**

$$\text{£}27.50 + \text{£}8.35 + 87\text{p} = \text{£}36.72$$

T	O	.	10th	100th
2	7	.	5	0
	8	.	3	5
+	0	.	8	7
<hr style="border: 0.5px solid black;"/>				
	0	.	1	2
	1	.	6	
	1	5		
	2	0		
<hr style="border: 0.5px solid black;"/>				
	3	6	.	72
<hr style="border: 0.5px solid black;"/>				

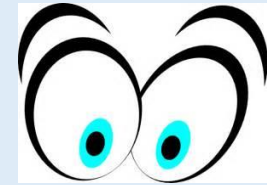
Remember to put the 87p in the correct place by **converting** from pence to pounds. 87p = £0.87.

Don't forget to line up the numbers correctly with the decimal point in the right place!

Can add with decimals to two places  
(including money)

## Adding decimal numbers (money): short addition method

$$\text{£}27.50 + \text{£}8.35 + 87\text{p} =$$



Let's complete  
the same  
calculation using  
the **short**  
**addition** method:

T	O	.	10th	100th
2	7	.	5	0
+	8	.	3	5
			8	7
			7	2
1	1		1	

**So**  
**£27.50 + £8.35 + 87p**  
**= £36.72**

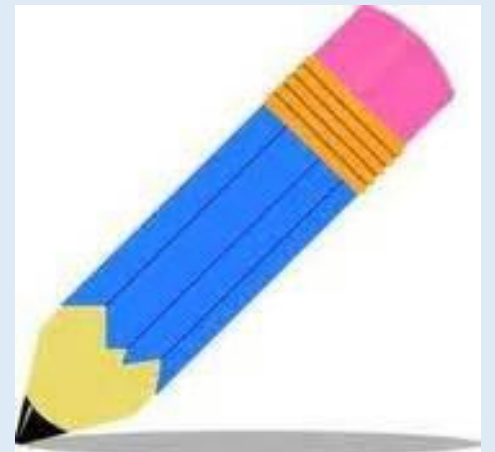
Can add with decimals to two places  
(including money)

## Your turn

Complete the following calculations using **both** the **expanded method** and the **short addition method**.

$$A. \text{£}32.45 + \text{£}6.50 + 26\text{p} =$$

$$B. \text{£}23.40 + 68\text{p} + \text{£}4.25 =$$





# Problem Solving

I buy some items costing £3.76, 89p,  
£1.05 and £17.49.

How much do I spend in total?



# Problem Solving

My Christmas credit card bill has just arrived. I have spent £367.50 on presents, £186.24 on food and £67.82 on decorations.

How much have I spent in total?

