

Green
Formal methods of addition and subtraction

4560
<u>+2418</u>

5627
<u>+1231</u>

1222
<u>+6612</u>

5555
<u>-1341</u>

2567
<u>-1255</u>

8910
<u>-5610</u>

Has Lia made a mistake in the calculation below?

	3	4	2	1
+	3	2	1	8
	6	6	4	9

Prove it.

Complete the calculation below.

	Th	H	T	O
	●	●●	●●	●●●
-	●	●●	●●	●●●

Find 3 different number sentences to complete this calculation.

	5	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>	5	0
+	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>
	8	7	8	4

Draw the missing counters.

	Th	H	T	O
	●	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>	●●	●●●●
-	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>	●●	●●	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center;"> </div>
	1	2	2	6

Yellow

Formal methods of addition and subtraction

$$\begin{array}{r} 4560 \\ +2248 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 4560 \\ +2168 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 4562 \\ +2518 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 2930 \\ -1418 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5405 \\ -1141 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 6275 \\ -1048 \\ \hline \\ \hline \end{array}$$

What number is missing from the calculation?

	4	4		6
+	2	4	6	1
	6	9	2	7
		1		

Tim thinks that the exchange takes place in the tens column in the calculation below.







	7	2	2	3
+	1	8	2	3

Is he correct? Prove it.

6b. What number is missing from the calculation?

	3	7	3	8
+	1		5	0
	5	6	8	8
	1			

Complete the calculation so that the missing digit leads to an exchange.

Th	H	T	O
+			
			

Red

Formal methods of addition and subtraction

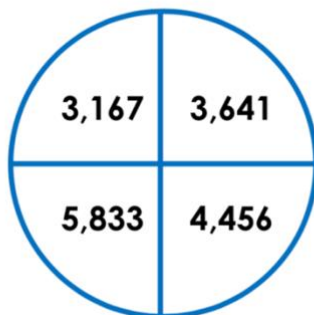
Which two numbers add together to make the answer 3,132?

<p>A</p>	<p>B</p>
<p>C</p>	<p>D</p>

Complete the calculation.

$$9,369 + 425 =$$

7a. Which two numbers add together to make the answer 8,097?



10b. What number is missing from the calculation?

$$4,258 + 5,5 \square 1 = 9,839$$

9b. Jack thinks that an exchange takes place from the hundreds column in the calculation below.

$$6,744 + 2,165$$

Is he correct?
Prove it.

2. Timmy has been given a challenge by his sister. She gives him the digit cards below which he must use to make 4-digit numbers to subtract from 8,977.



When he has completed his subtractions, each of his answers needs to fit one of these rules:

1. It is less than 8,000 and odd.
2. The thousands digit is the same as the ones digit.
3. The total of all four digits is 16.
4. It is a multiple of 5.

Green Answers

Formal methods of addition and subtraction

$\begin{array}{r} 4560 \\ +2418 \\ \hline 6978 \end{array}$	$\begin{array}{r} 5627 \\ +1231 \\ \hline 6858 \end{array}$	$\begin{array}{r} 1222 \\ +6612 \\ \hline 7834 \end{array}$
$\begin{array}{r} 5555 \\ -1341 \\ \hline 4114 \end{array}$	$\begin{array}{r} 8910 \\ -5610 \\ \hline 3300 \end{array}$	$\begin{array}{r} 2567 \\ -1255 \\ \hline 1312 \end{array}$

Has Lia made a mistake in the calculation below?

	3	4	2	1
+	3	2	1	8
	6	6	4	9

Prove it.
Yes, Lia has made a mistake because she has added too many tens. The answer should be 6,639.

Find 3 different number sentences to complete this calculation.

	5		5	0
+	3		3	4
	8	7	8	4

Various answers, for example:
5,150 + 3,634; 5,250 + 3,534; 5,350 + 3,434.

Complete the calculation below.

	Th	H	T	O
	●	●●	●●	●●●
-	●	●●	●●	●●●
	1	2	3	2

Draw the missing counters.

	Th	H	T	O
	●	●●●	●●	●●●●
-	●	●●	●●	●
	1	2	2	6

Yellow Answers

Formal methods of addition and subtraction

$\begin{array}{r} 4560 \\ +2248 \\ \hline 680 \end{array}$	$\begin{array}{r} 4560 \\ +2168 \\ \hline 672 \end{array}$	$\begin{array}{r} 4562 \\ +2518 \\ \hline 708 \end{array}$
$\begin{array}{r} 5405 \\ -1141 \\ \hline 426 \end{array}$	$\begin{array}{r} 6275 \\ -1048 \\ \hline 522 \end{array}$	$\begin{array}{r} 2930 \\ -1418 \\ \hline 151 \end{array}$

What number is missing from the calculation?

	4	4	6	6
+	2	4	6	1
	6	9	2	7
		1		

Complete the calculation so that the missing digit leads to an exchange.

Th	H	T	O
+	●●	●●	●●
	●	●●●●	●●

Numbers 4, 5, 6, 7, 8 or 9 could also have been inserted.

Tim thinks that the exchange takes place in the tens column in the calculation below.

	7	2	2	3
+	1	8	2	3

Is he correct? Prove it.

No, Tim is not correct because $20 + 20 = 40$. The exchange takes place from the hundreds to the thousands ($200 + 800 = 1,000$)

6b. What number is missing from the calculation?

	3	7	3	8
+	1	9	5	0
	5	6	8	8
	1			

Red Answers

Formal methods of addition and subtraction

Which two numbers add together to make the answer 3,132?

A



B



C



D



$1,521 + 1,611 = 3,132$

10b. What number is missing from the calculation?

$$4,258 + 5,5 \boxed{8} 1 = 9,839$$

Complete the calculation.

$$9,369 + 425 = \boxed{9794}$$

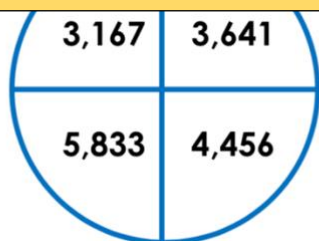
9b. Jack thinks that an exchange takes place from the hundreds column in the calculation below.

He is incorrect, the exchange takes place in the tens to the hundreds. ($60+40=100$)

Is he correct?
Prove it.

7a. Which two numbers add together to make the answer 8,097?

$$3641 + 4456 = 8097$$



2. Timmy has been given a challenge by his sister. She gives him the digit cards below which he must use to make 4-digit numbers to subtract from 8,977.



When he has completed his subtractions, each of his answers needs to fit one of these rules:

1. It is less than 8,000 and odd.
2. The thousands digit is the same as the ones digit.
3. The total of all four digits is 16.
4. It is a multiple of 5.

Various answers, for example:

$$\begin{array}{ll} 8,977 - 1,234 = 7,743 & 8,977 - 5,124 = 3,853 \\ 8,977 - 4,236 = 4,741 & 8,977 - 6,152 = 2,825 \end{array}$$