

Adding and Subtracting Within 1,000: practice solutions, Grade 3 – download the PDF

Written solutions to the chapter problems. Check each step, then correct yourself.

1 Breaking apart



Hundreds: $100 + 200 = 300$. Tens: $20 + 30 = 50$. Ones: $4 + 5 = 9$. Then
 $300 + 50 + 9 = 359$.

So $124 + 235 = 359$.

2 Friendly numbers



a. $250 + 150 = 400$ because $50 + 50 = 100$ and $200 + 100 = 300$, so the total is 400.

b. $430 + 270 = 700$ because $400 + 200 = 600$ and $30 + 70 = 100$.

c. $360 + 390 = 750$ because $300 + 300 = 600$ and $60 + 90 = 150$.

3 Subtracting round numbers



a. 8 hundreds $-$ 3 hundreds = 5 hundreds, so $800 - 300 = 500$.

b. $750 - 200 = 550$.

c. $640 - 100 = 540$, then $540 - 30 = 510$. So $640 - 130 = 510$.

4 Adding without regrouping



Ones: $2 + 6 = 8$. Tens: $4 + 1 = 5$. Hundreds: $3 + 5 = 8$.

$$\begin{array}{r} 342 \\ + 516 \\ \hline 858 \end{array}$$

So $342 + 516 = 858$.

5 Regrouping ones and tens



Ones: $4 + 8 = 12$, write 2 and regroup 1 ten. Tens: $6 + 3 + 1 = 10$, write 0 and regroup 1 hundred. Hundreds: $2 + 1 + 1 = 4$.

$$\begin{array}{r} 264 \\ + 138 \\ \hline 402 \end{array}$$

So $264 + 138 = 402$.

6 Subtracting without regrouping



Ones: $9 - 5 = 4$. Tens: $7 - 4 = 3$. Hundreds: $8 - 3 = 5$.

$$\begin{array}{r} 879 \\ - 345 \\ \hline 534 \end{array}$$

So $879 - 345 = 534$.

7 True or false?



Ones: $5 + 8 = 13$, write 3 and regroup 1 ten. Tens: $4 + 7 + 1 = 12$, write 2 and regroup 1 hundred. Hundreds: $3 + 2 + 1 = 6$. So $345 + 278 = 623$.

Ben is wrong. He forgot to add the regrouped ten.

8

The mystery number

Let n be the mystery number: $285 + n = 632$. Addition and subtraction are inverse operations, so $n = 632 - 285$.

$$\begin{array}{r} 632 \\ - 285 \\ \hline 347 \end{array}$$

Check: $285 + 347 = 632$. The mystery number is 347.

9

Regrouping twice

Ones: $2 < 5$, so trade 1 ten for 10 ones: $12 - 5 = 7$. Tens: now 2 tens, and $2 < 8$, so trade 1 hundred for 10 tens: $12 - 8 = 4$. Hundreds: $6 - 4 = 2$.

$$\begin{array}{r} 732 \\ - 485 \\ \hline 247 \end{array}$$

So $732 - 485 = 247$. Check: $247 + 485 = 732$.

10

Subtracting across a zero

There are no tens and no ones to trade, so trade 1 hundred for 10 tens (7 hundreds and 10 tens), then 1 ten for 10 ones (9 tens and 10 ones). Ones: $10 - 7 = 3$. Tens: $9 - 6 = 3$. Hundreds: $7 - 3 = 4$.

$$\begin{array}{r} 800 \\ - 367 \\ \hline 433 \end{array}$$

So $800 - 367 = 433$.

11 Is it reasonable?



- a. $618 \approx 600$ and $283 \approx 300$, so the estimate is $600 + 300 = 900$. The exact sum is $618 + 283 = 901$, very close to 900.
- b. $742 \approx 700$ and $389 \approx 400$, so the estimate is $700 - 400 = 300$. The exact difference is $742 - 389 = 353$. It is near 300, so it is reasonable.

12 Tickets at the stadium



Parts are put together, so add: $438 + 479 = t$.

$$\begin{array}{r} 438 \\ + 479 \\ \hline 917 \end{array}$$

Check: $917 - 479 = 438$. The stadium sold 917 tickets in all.

13 Walking the trail



The whole is 750 feet and one part is 468 feet, so subtract: $750 - 468 = f$.

$$\begin{array}{r} 750 \\ - 468 \\ \hline 282 \end{array}$$

Check: $282 + 468 = 750$. Mia has 282 feet left to walk.

14 Fact family



First check that $296 + 458 = 754$: $6 + 8 = 14$, $9 + 5 + 1 = 15$, $2 + 4 + 1 = 7$, so it is true. The other equations are:

- $458 + 296 = 754$
- $754 - 296 = 458$
- $754 - 458 = 296$

15 Find the error



Leo subtracted the smaller digit from the larger one in every column ($8 - 4 = 4$, $7 - 3 = 4$, $5 - 2 = 3$). In the ones column, $4 - 8$ is not possible without regrouping.

$$\begin{array}{r} 534 \\ - 278 \\ \hline 256 \end{array}$$

The correct answer is 256. Check: $256 + 278 = 534$.

16 Books read in class



- a. Class A read 245 books and class B read 318, so $245 + 318 = 563$. They read 563 books together.
- b. $318 - 190 = 128$. Class B read 128 more books than class D.

17 Greater or not?



$468 + 397 = 865$ (ones $8 + 7 = 15$, tens $6 + 9 + 1 = 16$, hundreds $4 + 3 + 1 = 8$).

$912 - 48 = 864$ ($912 - 50 = 862$, then add 2).

$468 + 397$ is greater, by $865 - 864 = 1$.

18 Digit cards



To get the greatest difference, make the greatest possible number and the least possible number. The greatest number uses the three biggest cards: 765. The least number uses the three smallest cards: 234.

$$\begin{array}{r} 765 \\ - 234 \\ \hline 531 \end{array}$$

The greatest difference is 531.

19 Missing digits



Ones: $4 + 8 = 12$, write 2 and regroup 1 ten. Tens: $\blacksquare + 3 + 1$ must end in 0, so it equals 10 and $\blacksquare = 6$; regroup 1 hundred. Hundreds: $3 + \blacktriangle + 1 = 6$, so $\blacktriangle = 2$.

$$\begin{array}{r} 364 \\ + 238 \\ \hline 602 \end{array}$$

The missing digits are 6 and 2.

20 Will it fit?



Estimate: $468 \approx 500$ and $349 \approx 300$, so $500 + 300 = 800$.

Exact:

$$\begin{array}{r} 468 \\ + 349 \\ \hline 817 \end{array}$$

The total is 817 pounds, which is less than 1,000 pounds. Yes, the truck can carry both crates.

21 Check the answer



Check: $355 + 458 = 813$, which is not 703. Eli is wrong.

Correct subtraction: trade 1 hundred, then 1 ten: 6 hundreds, 9 tens, 13 ones. $13 - 8 = 5$, $9 - 5 = 4$, $6 - 4 = 2$.

$$\begin{array}{r} 703 \\ - 458 \\ \hline 245 \end{array}$$

The correct answer is 245. Check: $245 + 458 = 703$.

22 Museum visitors



Let m be the morning visitors: $m + 276 = 641$. So $m = 641 - 276$.

$$\begin{array}{r} 641 \\ - 276 \\ \hline 365 \end{array}$$

Check: $365 + 276 = 641$. In the morning 365 people visited the museum.

23 Filling the tank



Subtract the amount already in the tank from the total: $900 - 478 = l$.

$$\begin{array}{r} 900 \\ - 478 \\ \hline 422 \end{array}$$

Check: $422 + 478 = 900$. It needs 422 more liters.



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