

## Estimating Sums and Differences

Estimation means rounding first, then doing the math. The answer is close to the real one, but quick to find — great for double-checking your work or for “about how many?” questions.

### How to Estimate

1. Round each number to the same place (usually the nearest ten or hundred).
2. Add or subtract the rounded numbers.
3. The result is an *estimate* — close to the exact answer, but not exact.

### Key Concepts

1. **Estimating** gives a number close to the exact answer. It is fast, and it is perfect for sanity-checking your work.
2. Always round each number to the *same* place before adding or subtracting. Mixing rounded and exact numbers leads to messy answers.
3. The bigger the place you round to, the rougher the estimate. Rounding to the hundreds is faster than rounding to the tens, but less precise.
4. Estimates use “ $\approx$ ” (read as “about” or “approximately equal to”) instead of “=”.

### Worked Examples

① Estimate  $472 + 315$  by rounding to the nearest hundred.

👉 First round each number to the nearest hundred. 472 rounds to 500 (the tens digit, 7, is at least 5). 315 rounds to 300 (the tens digit, 1, is less than 5). Now add the rounded numbers:  $500 + 300 = 800$ . So  $472 + 315 \approx 800$ . (The exact answer is 787 — our estimate is very close.)

💡 **Answer:**  $\approx 800$

② Estimate  $863 - 478$  by rounding to the nearest hundred.

👉 Round each number: 863 rounds to 900 (tens digit  $6 \geq 5$ , so round up). 478 rounds to 500 (tens digit  $7 \geq 5$ , round up). Now subtract:  $900 - 500 = 400$ . So  $863 - 478 \approx 400$ . (Exact: 385 — the estimate is in the right ballpark.)

💡 **Answer:**  $\approx 400$

③ Estimate  $47 + 68$  by rounding to the nearest ten.

👉 For smaller numbers, the nearest ten gives a better estimate than the nearest hundred. 47 rounds to 50 (ones digit  $7 \geq 5$ ). 68 rounds to 70 (ones digit  $8 \geq 5$ ). Add:  $50 + 70 = 120$ . So  $47 + 68 \approx 120$ . (Exact: 115.)




💡 **Answer:**  $\approx 120$

### Practice Problems

Estimate each by rounding to the nearest hundred unless told otherwise.

- |                         |       |                          |       |
|-------------------------|-------|--------------------------|-------|
| 1. Estimate $348 + 221$ | _____ | 7. Estimate $903 - 558$  | _____ |
| 2. Estimate $587 + 314$ | _____ | 8. Estimate $167 + 482$  | _____ |
| 3. Estimate $726 - 289$ | _____ | 9. Estimate $745 - 312$  | _____ |
| 4. Estimate $451 + 368$ | _____ | 10. Estimate $294 + 538$ | _____ |
| 5. Estimate $815 - 492$ | _____ | 11. Estimate $612 - 187$ | _____ |
| 6. Estimate $639 + 274$ | _____ | 12. Estimate $436 + 389$ | _____ |

**Study Tips**

-  Think of estimation as a “quick check.” Do it **before** solving exactly so you know roughly what the answer should be.
-  For numbers under 100, round to the nearest ten. For numbers in the hundreds, round to the nearest hundred. That keeps the estimate close to the real answer.
-  If your exact answer is very different from your estimate, look back — one of them probably has a mistake.

**Word Problems**

1. A bakery made 482 cookies on Monday and 319 cookies on Tuesday. About how many cookies were made in all? Estimate by rounding to the nearest hundred.

Answer: \_\_\_\_\_

2. A store has 736 apples and sells 289. About how many apples are left? Estimate by rounding to the nearest hundred.

Answer: \_\_\_\_\_

**Answer Key — with Friendly Explanations****Practice Problems**

1.  $348 \rightarrow 300$  and  $221 \rightarrow 200$ . Add:  $300 + 200$ .

 **Answer:**  $\approx 500$

2.  $587 \rightarrow 600$  and  $314 \rightarrow 300$ . Add:  $600 + 300$ .

 **Answer:**  $\approx 900$

3.  $726 \rightarrow 700$  and  $289 \rightarrow 300$ . Subtract:  $700 - 300$ .

 **Answer:**  $\approx 400$

4.  $451 \rightarrow 500$  and  $368 \rightarrow 400$ . Add:  $500 + 400$ .

 **Answer:**  $\approx 900$

5.  $815 \rightarrow 800$  and  $492 \rightarrow 500$ . Subtract:  $800 - 500$ .

 **Answer:**  $\approx 300$

6.  $639 \rightarrow 600$  and  $274 \rightarrow 300$ . Add:  $600 + 300$ .

 **Answer:**  $\approx 900$

7.  $903 \rightarrow 900$  and  $558 \rightarrow 600$ . Subtract:  $900 - 600$ .

 **Answer:**  $\approx 300$

8.  $167 \rightarrow 200$  and  $482 \rightarrow 500$ . Add:  $200 + 500$ .

 **Answer:**  $\approx 700$

9.  $745 \rightarrow 700$  and  $312 \rightarrow 300$ . Subtract:  $700 - 300$ .

 **Answer:**  $\approx 400$

10.  $294 \rightarrow 300$  and  $538 \rightarrow 500$ . Add:  $300 + 500$ .

 **Answer:**  $\approx 800$

11.  $612 \rightarrow 600$  and  $187 \rightarrow 200$ . Subtract:  $600 - 200$ .

 **Answer:**  $\approx 400$

12.  $436 \rightarrow 400$  and  $389 \rightarrow 400$ . Add:  $400 + 400$ .

 **Answer:**  $\approx 800$

**Word Problems**

1.  $482 \rightarrow 500$ ,  $319 \rightarrow 300$ . Sum = 800. About 800 cookies.

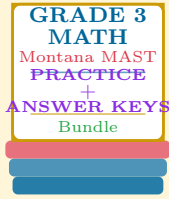
 **Answer:**  $\approx 800$  cookies

2.  $736 \rightarrow 700$ ,  $289 \rightarrow 300$ . Difference = 400. About 400 apples.

 **Answer:**  $\approx 400$  apples

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