

Even and Odd Numbers

An even number can be split into two equal groups with nothing left over. An odd number cannot — there is always one leftover. And here is the shortcut: only the last digit matters.

| | |
|---------------------|----------------------|
| Even numbers | End in 0, 2, 4, 6, 8 |
| Odd numbers | End in 1, 3, 5, 7, 9 |

Even: 6



All paired!

Odd: 7



1 left over!

Key Concepts

1. A number is **even** when you can split it into two equal groups with none left over — in other words, when 2 divides into it cleanly.
2. A number is **odd** when splitting it into two groups always leaves one behind. There is no way to fix this — an odd number simply does not pair up evenly.
3. You only need to look at the *ones* digit to decide. The thousands, hundreds, and tens places do not change whether a number is even or odd.
4. Some useful patterns: Even + Even = Even, Odd + Odd = Even, Even + Odd = Odd. Two odds combine to an even because the two “leftovers” pair up!

Worked Examples

① Is 258 even or odd?

👉 Ignore all the digits except the very last one — the ones digit. In 258, that is the 8. Since 8 is an even digit (it ends in 0, 2, 4, 6, or 8), the whole number 258 is even.

💡 **Answer:** *Even*

② Is 4,037 even or odd?

👉 Don't be tricked by the size of the number. Look only at the ones digit: 7. Since 7 is odd, the whole number 4,037 is odd. The thousands, hundreds, and tens places never enter the picture.

💡 **Answer:** *Odd*

③ Sara has 15 stickers. Can she share them equally between 2 friends with none left over?

👉 Try the split: $15 \div 2 = 7$, with 1 left over. Because there is a leftover, 15 is *odd*. Each friend gets 7 stickers and one sticker has nowhere to go. (You could also have spotted this right away: the ones digit of 15 is 5, which is odd.)

💡 **Answer:** *No — 15 is odd, so 1 sticker is left over.*

 **Practice Problems**

Write “even” or “odd” for each number.

- | | |
|--------------------------------|--------------------------------------|
| 1. Is 34 even or odd? _____ | 7. $12 + 15 = ?$ Even or odd? _____ |
| 2. Is 91 even or odd? _____ | 8. $24 + 36 = ?$ Even or odd? _____ |
| 3. Is 120 even or odd? _____ | 9. $7 + 8 = ?$ Even or odd? _____ |
| 4. Is 567 even or odd? _____ | 10. Is 1,000 even or odd? _____ |
| 5. Is 2,004 even or odd? _____ | 11. $19 + 19 = ?$ Even or odd? _____ |
| 6. Is 3,779 even or odd? _____ | 12. Is 4,856 even or odd? _____ |

Study Tips

-  Only the **last digit** matters. 3,482 is even because its ones digit, 2, is even.
-  If you forget the rule, try pairing physical objects (coins, beans, pencils). When there is nothing left over, the count is even.
-  Memorize the even endings: 0, 2, 4, 6, 8. Everything else is odd.

 **Word Problems**

1. Mrs. Lee has 28 crayons. She wants to put them in 2 equal groups. Can she do this with none left over? Explain.

Answer: _____



2. There are 153 marbles in a jar. Is the number of marbles even or odd? How do you know?

Answer: _____

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

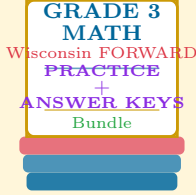
1. Ones digit is 4 — even.
 **Answer:** *Even*
2. Ones digit is 1 — odd.
 **Answer:** *Odd*
3. Ones digit is 0 — even.
 **Answer:** *Even*
4. Ones digit is 7 — odd.
 **Answer:** *Odd*
5. Ones digit is 4 — even.
 **Answer:** *Even*
6. Ones digit is 9 — odd.
 **Answer:** *Odd*
7. Even + Odd = Odd. ($12 + 15 = 27$, ones digit 7.)
 **Answer:** *27 — Odd*
8. Even + Even = Even. ($24 + 36 = 60$, ones digit 0.)
 **Answer:** *60 — Even*
9. Odd + Even = Odd. ($7 + 8 = 15$, ones digit 5.)
 **Answer:** *15 — Odd*
10. Ones digit is 0 — even.
 **Answer:** *Even*
11. Odd + Odd = Even. The two “leftovers” pair up. ($19 + 19 = 38$, ones digit 8.)
 **Answer:** *38 — Even*
12. Ones digit is 6 — even.
 **Answer:** *Even*

Word Problems

1. Yes. 28 ends in 8 (even), so it splits evenly. $28 \div 2 = 14$ crayons per group, no leftover.
 **Answer:** *Yes (14 + 14)*
2. Odd. The ones digit, 3, tells you that 153 cannot be split evenly into two groups.
 **Answer:** *Odd*

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