Rule of Twelfths

Quick Reference Cheat Sheet For Cockpit, Beach & Navigation

Block 1: The Magic Sequence (1-2-3-3-2-1)

The 6-Hour Tide Pattern

Tides rise and fall in a predictable pattern over approximately 6 hours. The Rule of Twelfths divides this change into simple fractions:

Tabelle einfügen:

Hour	Fraction	Cumulative
1	1/12	1/12
2	2/12	3/12
3	3/12	6/12 (50%)
4	3/12	9/12 (75%)
5	2/12	11/12
6	1/12	12/12 (100%)

Remember the sequence: ***1 - 2 - 3 - 3 - 2 - 1***

Block 2: The Formula

How to Calculate

Height = Start Height ± (Total Range × Fraction)

- **Total Range** = High Water Height − Low Water Height
- **Fraction** = The twelfth value for the current hour (from table above)
- **Use MINUS (−)** if tide is falling (High Water → Low Water)
- **Use PLUS (+)** if tide is rising (Low Water → High Water)

Block 3: Quick Example

Example Calculation

Text: Scenario: High Water is 4.5m at 12:00. Low Water is 1.5m at 18:00. What is the tide height at 15:00?

Steps:

1. **Total Range:** 4.5m − 1.5m = **3.0 meters**
2. **Time elapsed:** 12:00 to 15:00 = **3 hours**
3. **Fractions for 3 hours:** 1/12 + 2/12 + 3/12 = **6/12 (or 50%)**
4. **Height change:** 50% of 3.0m = **1.5 meters**
5. **Final height:** 4.5m − 1.5m = **3.0 meters at 15:00**

Block 4: Important Notes

When NOT to Use This Rule

Bullet Points:

- ❌ In shallow rivers or estuaries (tides don't follow smooth curves)
- ❌ At locations with "double high" or "double low" water (e.g., Southampton, UK)
- ❌ For large vessels requiring extreme precision
- ✅ Always verify with official tide tables for critical navigation

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1Generated by MathPhysicsCalc.com
For educational purposes. Always verify with official Admiralty Tide Tables for navigation.