FREE PRINTABLE REFERENCE · PART 1 OF 2

Top 10 Chinese Mental Math Shortcuts

Stop calculating the long way. Learn the pattern, say the steps, and trust your number sense.

1 **Base-100 pairs**

Subtract diagonally; multiply complements.

97 × 96: 97 − 4 = 93; 3 × 4 = 12 → 9,312

2 **Square ending in 5**

n(n + 1), then append 25.

85^2: 8 × 9 = 72 → 7,225

3 **Multiply by 11**

Outer digits stay; neighboring digits add.

42 × 11 = 462; 46 × 11 = 506 (carry 1)

4 **Same tens, ones sum 10**

n(n + 1) | product of ones.

73 × 77: 7 × 8 = 56; 3 × 7 = 21 → 5,621

5 **Multiply by 5**

Multiply by 10, then halve.

86 × 5 = 860 ÷ 2 = 430

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6 **Multiply by 25**

Multiply by 100, then divide by 4.

48 × 25 = 4,800 ÷ 4 = 1,200

7 **Multiply by 9**

Multiply by 10; subtract the original.

67 × 9 = 670 − 67 = 603

8 **Subtract by compensation**

Round the subtrahend; add back the excess.

1,000 − 397 = 1,000 − 400 + 3 = 603

9 **Multiply by 19 or 21**

Use ×20, then subtract or add once.

46 × 19 = 920 − 46 = 874

10 **Check with digit sums**

Compare digital roots of factors and product.

97 × 96: roots 7 × 6 → 6; 9,312 → 6 ✓

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