

Sixth Grade Math Tricks

- Multiplication and zeroes. When multiplying two numbers, ignore all ending zeroes, do the multiplication, and then add the zeroes back onto the answer.
Example: For $4000 \cdot 300$, we multiply 4 times 3, and then add on the 5 zeroes giving a result of 1,200,000.
- Division and Zeroes. When dividing two numbers that both end in zeroes, cancel the same number of ending zeroes from each of the two numbers, then do the division problem.
Example: For $24000 \div 600$, we cancel two zeroes from both numbers, and then divide 240 by 6 to get 40.
- Multiplying and Dividing by 10, 100, 1000, etc. Simply move the decimal point!
Example: $634.6 \div 100 = 6.346$ We move the decimal point 2 places because there are 2 zeroes in 100.
Example: $48.37 \cdot 1000 = 48370$ The decimal point gets moved 3 places since there are 3 zeroes in 1000.
- Adding Numbers by Grouping. Search for digits that add up to 10 or 20.
Example: For $97 + 86 + 13 + 42 + 54$, we see that with the ones' digits we can add $7 + 3$ and $6 + 4$ to make ten twice, leaving the 2 (from the 42) left over. The sum of the ones' column is therefore 22. In the tens' column, the carry of 2 combines with the 8 to form 10, as does the 9 and the 1. We are left with the 4 and 5. The tens' column is therefore 29. Our answer is 292.
- Multiplying by 4. You can instead double the number two times.
Example: For $4 \cdot 35$, we double 35 to get 70, and double again to get a result of 140.
- Multiplying a 2-digit number by 11. Separate the digits, and then insert the sum of the digits in-between.
Example: For $62 \cdot 11$, 6 plus 2 is 8, so we place the 8 between the 6 and the 2, giving a result of 682.
Example: For $75 \cdot 11$, 7 plus 5 is 12, so we place the 2 between the 7 and 5 and carry the 1, giving 825.
- Multiplying two numbers that are just over 100. First write down a 1, then next to the one we write down the sum of how far above 100 the two numbers are, and then the product of how far above 100 the two numbers are. Both the sum and the product must be two digits.
Example: For $105 \cdot 102$, add 5 plus 2 (to get 07), and then multiply 5 times 2 (to get 10), giving 10710.
Example: For $112 \cdot 107$, we do $12 + 7$ (19) and then $12 \cdot 7$ (84), which leads to an answer of 11984.
- Dividing by 4. You can instead cut the number in half, two times.
Example: For $64 \div 4$, we take half of 64 to get 32, and then take half of that for a result of 16.
- Subtraction by Adding Distances. Pick an "easy" number between the two numbers, and add the distances from each of the numbers to the easy number.
Example: For $532 - 497$, choose 500 as the easy number. The distance from 532 to 500 is 32 and the distance from 497 to 500 is 3. The answer is therefore $32 + 3$, which is 35.
- Division by Nines. When dividing two numbers where the divisor's digits are all nines, we get a decimal where the dividend repeats, but the number of repeating digits must be equal to the number of nines.
Example: $38 \div 99 = 0.38$ **Example:** $417 \div 999 = 0.417$ **Example:** $62 \div 999 = 0.062$
- Multiplying by Nines.
Method #1: Multiply by 10, 100, or 1000, and then subtract the original number.
Example: For $47 \cdot 99$, we do $100 \cdot 47 - 47$, which is $4700 - 47$, giving an answer of 4653.
Method #2 (for single digits): Multiply the single digit by 9, which gives us a two-digit answer. Then separate these two digits and insert one less nine than what was in the original problem.
Example: For $8 \cdot 9999$, we multiply 8 times 9, which gives us 72. Then we insert three nines between the 7 and the 2, giving a final answer of 79,992.
- Reducing before Dividing. Any division problem is viewed as a fraction that can often be reduced.
Example: For $3500 \div 2800$, we reduce the fraction to $\frac{5}{4}$, which is $1\frac{1}{4}$ or 1.25.
- Multiplying by 5. You take half the number, and then add a zero, or move the decimal point.
Example: For $5 \cdot 26$, we take half of 26 to get 13, and then add a zero, giving us a result of 130.
Example: For $5 \cdot 4.18$, half of 4.18 is 2.09, and moving the decimal point to the right one place gives 20.9.
- Dividing by 5. Double the number, and then divide by ten (move the decimal one place to the left).
Example: For $80 \div 5$, we double 80 and then chop off a zero, giving a result of 16.
Example: For $93 \div 5$, we double 93 and then move the decimal point one place to the left to get 18.6.